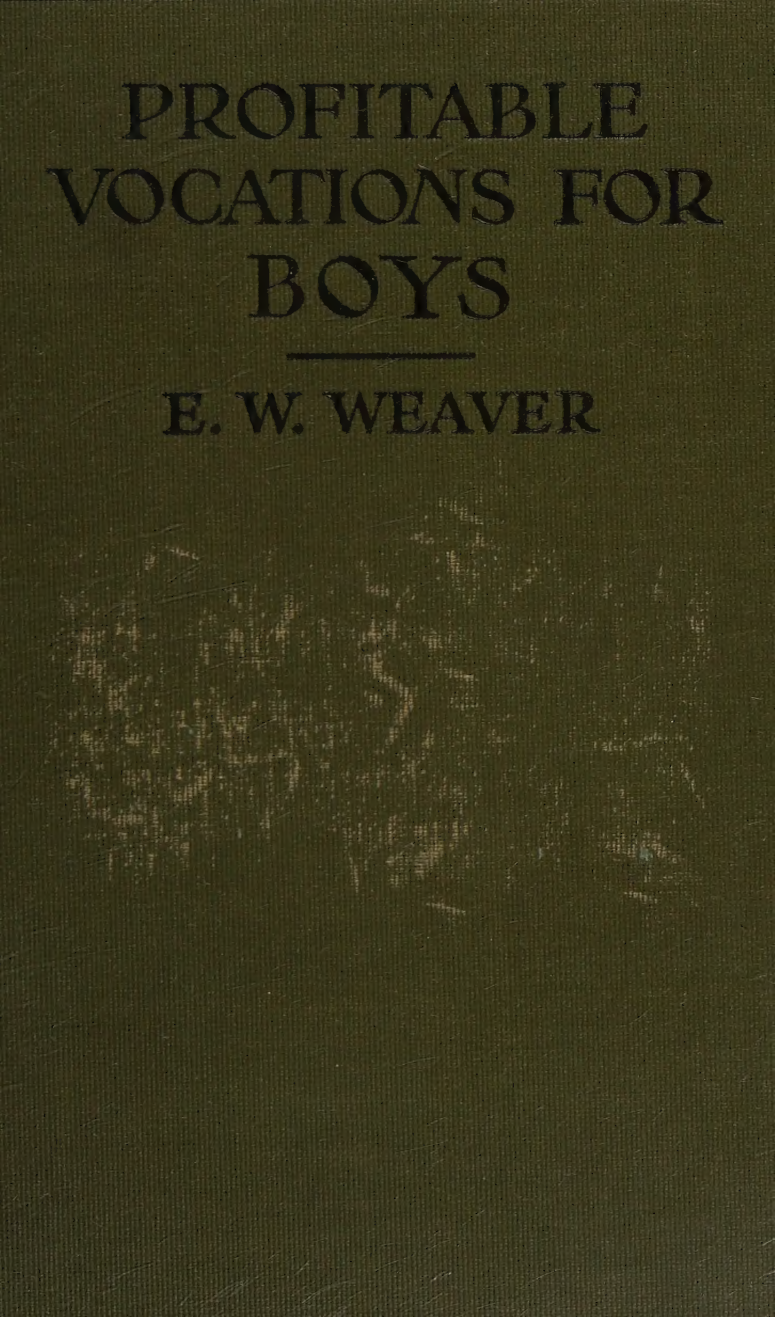
PROFITABLE VOCATIONS FOR BOYS

E. W. WEAVER



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THE VOCATIONAL SERIES

PROFITABLE VOCATIONS FOR GIRLS

By E. W. Weaver

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PROFITABLE VOCATIONS FOR BOYS

By E. W. Weaver and J. Frank Byler

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PROFITABLE
VOCATIONS FOR BOYS

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PREFACE

THE industrial situation demands an increase in the vocational content of the school curriculum. Any process of reconstruction must necessarily be slow. The teachers can, meanwhile, do much in their classes towards giving a boy about to leave school a general survey of the field of occupations, helping him to form a definite purpose, showing him how to investigate questions which deal with the choice of a career and the best methods of preparation for success along particular lines, directing his attention to the vocational training facilities of his community, showing him how to utilize them and placing before him an index to vocational literature.

From this rapidly accumulating literature there will be formed ultimately some definite rules for the scientific management of the individual by the aid of which the prospective worker may be enabled to choose wisely, prepare thoroughly and advance himself rapidly. The reader of this literature cannot escape the conviction that the apparent maze which leads from the entrance gateway of the many employments that are open to a reasonable degree of prosperity is not as complex as it seems and that there never was a time when the well-prepared and determined worker was so sure of a comfortable living as now. On the other hand, it was never so easy for the thoughtless to drift into such hopeless industrial situations.

An effort has been made to provide in this handbook a brief summary of the available information relating to the conditions for admission to the principal gainful occupations and to present in suggestive forms the methods by which the workers may advance themselves.

The ideal book of this kind would review all possible occupations; but since there are few industries in which either the requirements or the rates of compensation are standardized this is impossible. The authors, therefore, had to content themselves with presenting methods for making investigations of the conditions in particular occupations for any locality by making detailed studies of a few leading industries and reviewing others very briefly.

The ideal book should also present methods of making exact determinations of the vocational promises of any individual; but no such methods have been worked out except for a very limited number of purely mechanical lines of work. The authors had to content themselves with recommending to students that they should read and try to analyze the vocational histories of those individuals who have achieved success.

The publishers have kindly consented to make accessible the rapidly increasing library of vocational literature and their expanding files of newspaper clippings to readers who desire more detailed information concerning any of the topics treated in this book, stipulating only that letters of inquiry should contain self-addressed stamped envelopes for reply and have pasted on the outside one of the special inquiry coupons printed on the last page of this book and that no correspondence containing any other matter should be enclosed in the same envelope.

Acknowledgments are due to Mr. Benjamin A. Heydrick of the High School of Commerce of New York City who assisted in preparing the original bibliography on vocations; to Mr. Marcus B. Lambert of the Richmond Hill High School of New York who made investigations into the standards of requirements and compensation in the civil service; to Mr. Ralph W. Allen of the same school for a valuable paper from which the material in the chapter on the graphic arts was taken; to Mr. Warren J. Kibbe of the Jamaica High Schools for assistance in preparing the index to the special training schools and the chapters on office work; to Mr. Joseph J. Kline of the Richmond Hill School for materials upon which the chapters on accountancy are based; to Miss Bertha Weaver of the Montclair, New Jersey, High School and Miss Ella R. Peiffer of the Wichita, Kansas, High School for assistance in preparing the manuscript for the printer. The published reports of the Labor Bureaus and Industrial Commissions, of the British After-Care Committees and the Bureau of Vocational Guidance and Industrial Education of the Buffalo Chamber of Commerce have been used freely.

"A nation is most prosperous only when its production is greatest and the enjoyment of these producing powers is most evenly distributed. Not only must more foodstuffs be raised, more goods manufactured, and more structures erected, but labor must be properly directed, and the food, clothing, and buildings properly used in order to prevent over-production.

"With intelligent distribution of employment and consumption, all possibility of over-production will cease. Therefore, the crowning work of an educational system will be vocational guidance. One of the greatest handicaps to all classes to-day is that ninety per cent. of the people have entered their present employment blindly and by chance, irrespective of their fitness or opportunities. Some day the schools of the nation will be organized into a great reporting bureau on employment opportunities and trade conditions, directing the youth of the nation—so far as their qualifications warrant—into the lines of work which then offer the greatest opportunity. Only by such a system will each worker receive the greatest income possible for himself, and also the greatest benefits possible from the labors of all, thus continually increasing production and yet avoiding over-production in any single line."

ROGER W. BABSON.

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PROFITABLE VOCATIONS FOR BOYS

CHAPTER I

The Inevitable Conflict

The nurture of the boy in the home, his intellectual training in school, the trials of his strength in athletic contests, are the preliminaries in that struggle in which later he is to establish himself in a position of influence,—or failing in which he will be compelled to accept the conditions which are imposed upon those who are dependent upon others.

The present day industrial slavery into which it is so easy for the lazy, the careless, and the thoughtless to drift is demoralizing in its influence whether it takes the form of dependence upon the more successful members of the young man's family; dependence upon some employment, the unpromising nature of which he discovers too late to enable him to make preparation for anything better; or in later life, dependence upon the charitable inclinations of his fellows. To keep out of this kind of slavery requires a conflict with the desires of youth for the immediate possession of the cheap things of life and a determination to resist the temptations to follow along the ever-open easy paths which lead to no profitable ends.

All this calls for self-denial, careful planning, persistent and long enduring effort. The young man who would win, like the wise general, must fix his goal in his own mind, take careful account of his equipment, plan

his campaign, and push his advance at every opportunity. He studies himself, surveys his field of opportunities, seeks some satisfying employment which will permit the free exercise of his best powers, determines upon the acquisition of some skill or the accumulation of some experience which will enable him to make reasonable terms with some employer, or land him in a position in which he may be the master of his own destinies.

At an early age, therefore, either through his own efforts or with the assistance of others, he will try to discover his own best powers through the trial of himself in every possible way. By careful observation he will learn how others are working out their successes along those avenues which are open to him.

Much of his success will depend upon his attitude towards his work during his apprenticeship period. If he sees in it only a means of earning those things the value of which disappears with their possession, work will soon lose its attractions for him; but if work is regarded as an invitation to effort, a means for enlarging his capacities, and for achieving new and more important conquests, it ever becomes the introduction to a larger life.

Here comes to mind the career of one who made subject after subject his own during his school career. After his graduation he accepted a messenger's position in a business office in which he was tempted to master the routine of many and varied financial transactions. When a larger maturity admitted him to a subordinate position in government service, he mastered small and then larger transactions with such thoroughness that he won a foreign commission. This in turn was so well

performed that he attracted the attention of the agent of a world corporation whose recommendation was the means of placing him in charge of the operations of a branch office with business ramifications covering two continents. Here in entire forgetfulness of self he achieved that mastery over material things which ever becomes the first step in the determination of a man's own destinies.

This perpetually new conflict is as old as the race. It is the same for nations as for individuals. The best epitome is in the Book of Exodus which is a record of the struggle through which a nation passed on its way from slavery to a land of promise, a position of independence and, later, of supremacy. The autobiography of Benjamin Franklin furnishes an illustration of the ways in which an individual may advance himself through fixed purposes and persistent efforts from the position of an apprenticed servant to that of a man of large affairs. Other books of biography add their suggestions to the inquiring student.

The conflict will be likely to end in more satisfactory results if carried out in accordance with a definite plan. The architect and the engineer, at the beginnings of their undertakings, sketch out what they desire to accomplish. As they proceed to the study of the details their original plan is altered and enlarged. It is well for him who would build a career to begin with a tentative plan. As he reads the following pages and studies those books which relate to the vocation that he is considering he will also modify and enlarge his plans in their details.

In his tentative sketch of a plan for a career, he will set forth: (1) his own preferences and the expressed

wishes of his parents and friends in regard to his future; (2) his own reasons for his choice, reasons in favor of or against his choice which he gleaned from books or magazine articles, arguments in favor of or against his choice which were advanced by those acquaintances who were consulted; (3) the personal characteristics by the aid of which he hopes to win success in the vocation under consideration; (4) the educational requirements for beginners and the legal requirements for the practice of a trade or a profession; (5) the schools to be attended and the estimated time and expense involved in preparation; (6) the possible rewards as stated in the authorities which were consulted, and the average number of years of usefulness which a worker may expect in the vocation under consideration.

VOCATIONAL STUDIES

1. Write the exodus of some individual of your father's acquaintance from the helplessness of childhood to a position of promise and independence.

2. Make a record of the successive steps through which some prominent graduate of your own school advanced himself.

3. Make an outline of the steps through which the Pilgrim Fathers passed in working out their emancipation.

4. Make a brief outline of the early training, the preparation, and the progressive steps in the careers of Jacob A. Riis, James A. Garfield, Peter Cooper, George Peabody, Stephen Girard, Robert Fulton.

CHAPTER II

The Preliminary Survey

When a young man awakes to the conviction that he must prepare for some occupation which will bring him profitable returns and looks about he will be oppressed with a feeling that everything is overcrowded. There are doctors and dentists in every street, pharmacists at every corner, lawyers in every office building. All the worth-while positions in factory, store, and office are occupied and there are retail establishments to cater to every kind of want. This feeling will leave him if he will consider for a moment that fully one-third of the men whose positions he covets are past middle age and that a large number of them will be forced by death and sickness and infirmities to vacate their places during the years in which he is making his preparation and demonstrating his fitness. In the custom houses of thirty of the largest cities of the country over ten per cent. of the positions had to be filled in 1911 and these positions required special preparation and paid fairly good salaries. Of all the positions in the executive departments of the government at Washington which are open to competitive examinations nearly ten per cent. became vacant during the same year.

There is competition for these positions which are really promising and no young man may expect to drift into any of them. The drifter will be able to estimate his chances if he considers that any one thousand workers who enter the labor market of any of our larger

cities in any given year will ultimately be distributed as follows:

146 will be proprietors of business enterprises,
18 will be superintendents and managers,
53 will be in professions,
15 will be government officials and employes,
174 will be workers in stores and offices,
167 will be skilled mechanics,
192 will be doing specialized factory work,
235 will be employed at manual labor.

The organization of our industrial armies will appear more complex upon a closer examination. In the little city of York, Pennsylvania, in 1910 the inhabitants were engaged in 187 different occupations. In New York City in the same year, boys between the ages of sixteen and twenty were in 220 well-defined groups of occupations. In the same year in the manufacturing industries of the city there were 2,200 different trades open to workers and in the making of footwear there were 182 distinct processes all of which required some special preparation. Surely in all these varieties of work everyone may elect something which will satisfy him; but the competition is greatest and the wages are lowest in those lines which are easiest to enter and which require the least expensive preparation.

In general terms, a boy may elect to become a professional man, a skilled mechanic, decide upon getting experience in some line which will lead him to go into business for himself, or look forward towards being some one's hired man all his life. He may aim to follow the thinking trades, the handicrafts, qualify for a life of leadership, or be content to remain a servant.

If he delights in books, learns how to extract from them the experience of others, thinks quickly, masters his school subjects readily and thoroughly, is able to pass through the high school, the college, and the special training school, he may well aim to enter one of the professions and expect to make a good living. If he shows that he possesses good judgment, can adapt himself to others, demonstrates capacities for leadership in social and athletic organizations, and can command the funds to support himself through a long period of unremunerative employment, he may even expect to win one of the few great prizes which are offered in each one of the professions.

If a boy must go to work at sixteen, is fond of tools and machines, and is strong physically, he can generally secure an apprenticeship to one of the skilled trades. The best trades pay low wages to the beginner; but if the worker while he serves his apprenticeship develops a high grade of general intelligence, he may qualify for executive positions in which his earnings will not be far below those of the average professional man and his income will perhaps be more certain.

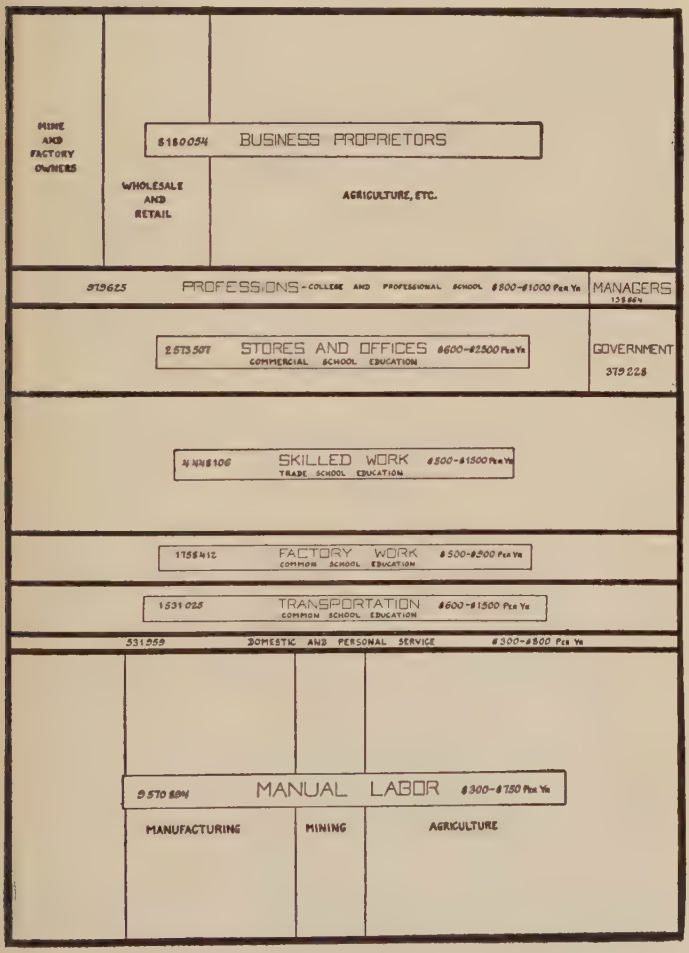
The boy who does not care for mechanical work and must enter employment at sixteen, if he is possessed of habits of accuracy and has stability, will find open to him positions in stores and offices. If he supplements his practical experience during his early years of work with such business training as can be secured in the evening classes of our cities he may reach positions as remunerative in business as his fellow has open to him in the shops or the trades.

The skilled mechanic or the young man who takes

a position in office or in store can choose a line in which it is possible, after he acquires his experience and comes to his maturity, to go into business for himself. There is always the danger that those who go into service at an early age will acquire the hired man's habit of doing only what must be done when under oversight and direction, thus becoming unfitted for anything but the hired man's job, and all jobs of this kind are much alike whether in store, in office, or in factory. There are so many workers who are always willing to take work which offers them a bare living that they determine the conditions and those who are unwilling to make themselves ready for really promising kinds of work must be content with these low standards.

There are some promising prospects in most of these lines of work which the wideawake will soon discover. The manual laborer may find chances to prepare himself to manage others; the yardman in the railroad service may advance himself in the lines of promotion by diligently studying the requirements of the work of the man in the next position ahead of him; the worker in the market garden may do his work so well that he may acquire the confidence to become his own employer; and the digger of the trenches may find a way to become a contractor on his own account.

CHART SHOWING THE APPROXIMATE DISTRIBUTION OF ALL MALES IN THE UNITED STATES WHO WERE REPORTED BY THE CENSUS OF 1910 AS ENGAGED IN GAINFUL OCCUPATIONS.


MINE AND FACTORY OWNERS
WHOLESALE AND RETAIL
AGRICULTURE, ETC.
$180054 BUSINESS PROPRIETORS
313625 PROFESSIONS - COLLEGE AND PROFESSIONAL SCHOOL $800-$1000 PER YR
MANAGERS 138864
2573507 STORES AND OFFICES $600-$2500 PER YR
COMMERCIAL SCHOOL EDUCATION
GOVERNMENT 379228
4 NNS106 SKILLED WORK $500-$1500 PER YR
TRADE SCHOOL EDUCATION
1758412 FACTORY WORK $500-$800 PER YR
COMMON SCHOOL EDUCATION
1531025 TRANSPORTATION $600-$1500 PER YR
COMMON SCHOOL EDUCATION
531259 DOMESTIC AND PERSONAL SERVICE $300-$800 PER YR
9570894 MANUAL LABOR $300-$750 PER YR
MANUFACTURING
MINING
AGRICULTURE

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CHAPTER III

A Brief Self-Examination

No amount of determination or training could make out of those few people who are born with defective eyesight or color blindness satisfactory salesmen or safe locomotive engineers, and a few persons are so pre-eminently talented in music or in art that it would be a great loss to the world if they were permitted to use their energies outside of the exercise of these high endowments. Between these two extremes are the many who must each take one of the few opportunities which are open to them, make the most of these and hold themselves in readiness for better things as they are offered. Each man's success will be determined by the way in which he engineers his own machine. With a given power and the same handling the average human machine will accomplish about the same in one field as in another. The owner of this machine must early learn that it is no one's particular business to help him bring it to the highest success, while there are hundreds who will do all they can to prevent him from occupying the places which they themselves covet.

In order to bring this human machine to its most effective uses and derive from it the best values, the owner must know what the equipment of a valuable and effective human machine is and how these values are best developed. The owner of such a machine who brings to his family less than that which pays for maintenance of the machine is not likely to be highly appre-

ciated by others nor to be well satisfied with himself; and if the lazy son of the boss draws a good salary without earning it, he is not going to be popular with intelligent associates for they know that for everyone who gets more than he earns there must be others who will be compelled to earn more than they get.

In our eastern cities the average earnings of all the laboring men and factory hands is less than $600 a year and the estimated cost of their support whether idle or at work approaches $400 a year. The difference is hardly enough to pay during their productive years for their support during childhood and in old age; their net efficiency, as an engineer would call it, is not high; but they own a machine which pays for itself and this would be a comfortable world if there were no worse.

Men may increase their net efficiency in many ways. An Italian fruit vender finds that by making the extra effort which will enable him to retail two cart loads of fruit a day instead of one he may accumulate a surplus towards making his first payment on a horse and wagon whose possession will make it possible for him to treble the profits of his push-cart days. He increases his net efficiency by enlarging his equipment through the wise use of his extra hours during a limited period.

A porter in a warehouse earns enough to support himself by working nine hours a day. By taking evening courses in bookkeeping, he prepares himself for a position in the office and when the vacancy occurs he receives his promotion with an increase of $200 a year to his earnings. He has increased his net value to himself by the mastery of a branch of knowledge through the use of his unemployed hours. He might have done the same if a quick ear, a ready memory and a good

command of English had inclined him to master stenography. By mastering his mathematics, the young draftsman who has no prospects beyond twelve dollars per week qualifies for a civil service position which opens to him a line of possible promotion to $1,200 a year and thus more than doubles his net value to himself, for his living expenses increase at a smaller rate than his earnings. His knowledge and skill increase his market value.

The transforming power of knowledge depends, not so much upon the nature of knowledge, as upon the processes through which the student passes in acquiring this knowledge. The knowledge which one gains by watching a baseball game has little value; the habits of quick decision, the enlarged powers of endurance which are the part of the player modify his character very greatly. To listen to an evening school teacher's lecture on science or to watch another in the entertaining performance of an art has its value but the actual study of the science by going through the steps by which the race has developed it must increase the value of the student by placing him in possession of the experience of the ages in one particular direction.

The boy who persists in keeping at his bookkeeping problems until he has corrected them acquires an appreciation of the value of accuracy which does more to increase his own value than the knowledge of the rules of bookkeeping. The same increased values must come from the faithful performance of the experiments of the laboratory and the patient mastery of the applications of the principles of art.

The boy who patiently works out the problems of geometry or learns how to translate the printed condi-

tions of problems into concise algebraic formulas and the boy who by mastering a language in addition to his native tongue increases his appreciation of the value of the words and phrases which he uses—these acquire the very marketable ability to translate oral and written instructions into exact action, which means a capacity for that kind of satisfactory service which is the best preparation for successful leadership.

The elements of a sound education are: a thorough command of English whether for the subordinate whose value depends upon his ability to understand instructions, for the leader who must know how to give his orders in unmistakable language, the salesman who must know how to describe his goods in persuasive terms, or the professional man who must know how to express his judgments with clearness; the ability to interpret plans and drawings, in which so much of the mechanical and scientific thought finds its economical expression; such a ready facility in the use of books and libraries which comes from the careful study of a variety of subjects rather than from desultory reading; and a ready knowledge of the history of the world and those laws which determine the great industrial and commercial changes which are continually taking place.

These increased values which come from the right use of educational facilities constitute what the past has to offer to the young man; from the present he may secure other increments through the proper use of his social relations. These he will acquire but poorly until he can get into relations which will enable him to see phases of life different from those of the gang in the street, or the boys' club. Moreover, the world has little to offer to the young man who appreciates only

the abnormal phases of life which constitute such a large part of the offerings of the popular newspapers, the frothiness which appears in the literature which is written for the frivolous, and the grotesque performances of the moving picture theater and the vaudeville stage.

He will become a valuable man, indeed, if while he gets his first experiences in his relations with men of the best kind, he will learn of the existence of a body of moral laws which determine the ultimate success of men even as the immutable laws of the material world determine the fate of all things animate and inanimate, and will acquire a firm faith in the predominance of a sense of fairness and honesty and integrity among men. These will make for stability of purpose and courage in action which will go far towards insuring success.

An Allegory

An old uncle of mine was somewhat of a philosopher. He occupied the ancestral home of the family when I was a small boy and turned my attention in childhood to a lesson which has been abiding with me through life. He related to me how there was in his childhood at the entrance to the old homestead on one side of the gateway an elaborately carved and brightly painted gatepost. On all the countryside the place was known as the house with the red gate.

On one side of the driveway just inside of the stone fence was what was in my time a tall and very symmetrical oak. My uncle would tell how he watched the little tree as it first showed its head above the stone wall, and he would relate imaginary conversations between the gaudy post, the pride of the family, and the

presumptuous twig. Through much effort the gate-post had been kept painted and straightened by several generations of the family but it had disappeared long before my days. The little twig with a force within itself sent its rootlets along the stone wall finding for them a way to the rivulet on the other side. Every season it put forth an ever increasing number of leaves, each modelled and colored with care—much as a school boy works out what are to him meaningless exercises—only to cast them all away and to repeat the operations after a winter's rest. To catch the sunshine before the tall trees would put forth their overshadowing leaves it awoke early in the spring, later sheltering its head under their branches from the early frosts so that it might continue to grow through the late Indian summer.

Lifting its head higher and higher, bearing with indifference the scorching heat, delighting in the sudden storms, it developed such form and beauty that it was preserved when the neighboring groves were cleared away, to become itself the landmark by which the place became known to a generation which had forgotten the haughty neighbor of the little twig.

Upon a recent visit, I saw the birds nesting in its branches and the children from the nearby school eating their noonday lunches and playing their games in its cooling shades, and when the new proprietor of the place builds a stately home for his generations he will put into places of honor the timbers cut from the mighty tree which through its life of struggle attained beauty and usefulness in accordance with the unchanging laws which a wise Ruler had ordained for its government.

The same Ruler made the laws in accordance with

which young men through their daily wrestling with problems whose full meaning they do not always understand, come to their maturity and these laws determine their destinies as surely as the other laws determine the growth of the trees in the forests. In the last analysis the valuable individual must be the product of external influences and of the energies which come from within himself through his struggles, by their conservation through self-denial, and by their proper direction in accordance with those eternal laws many of which have been formulated by inspired men and incorporated in their sacred books and among which are these: "Whatsoever a man soweth that shall he also reap" and "He that is diligent about his business shall stand before kings."

Practical Studies

1. Write an imaginary dialogue between the painted post and the little oak tree.

2. Write an imaginary conversation between the young man who had grown up in the house of the idle rich and the independent, self-supporting mechanic who makes repairs in his home.

3. After reading carefully Ruskin's *Seven Lamps of Architecture* make a note of the different things which you observe as you go about the city which you had never noticed before reading the book. Try to frame a statement setting forth how the reading of the book increased your value or your pleasure.

4. From the diagram on page 9 estimate the percentage of all workers in the United States who are engaged in manual labor and estimate the annual addition to the national wealth if one-tenth of these would become skilled workers with possible annual earnings of $1,000 a year instead of remaining manual laborers at $600.

CHAPTER IV

Choosing an Employer

Most of the recruits who enter gainful occupations begin as wage earners. Their employer makes their environment for them; he assigns their work; selects the shopmates with whom they are to be associated; appoints the length of their working hours and supervises the sanitary arrangements of their surroundings.

The desirable employer believes in a square deal when he is exchanging his own money for the time and energy of his workers as well as when he is trading with his customers. As a rule the employer who advertises for a worker, asking applicants to state their qualifications and also to specify the lowest wages which they are willing to accept, is not the employer who has any definite standards but he is more likely to be the one who is ever on the lookout for having his work done for the lowest wage and is willing to discharge any worker when someone appears who will take his job for less pay. The great mercantile houses in dealing with the public add to the cost of securing an article or of making it the cost of handling it and a reasonable profit in addition, thus determining the price at which it is supplied to the customer. The same method may be followed in fixing the price of labor and of service to those who purchase them.

An American boy who has been reared in our cities represents an investment of $3,000 or more of the savings of his parents in addition to the amount which the

city has spent for his education. If he goes into service and lives at home he will cost his parents not less than $5 per week for his maintenance. If to this we add something to provide for his recreations, his expenses in times of sickness and unemployment, and a reasonable profit to his parents upon their investment, we will find that a minimum wage will mean $8 or $10 per week. Of course, a boy can work for less, for any amount, or for nothing, if a period of unremunerative employment supplies him an experience which will bring him a larger future return or help him to get into line for promotion to a profitable position. More and more employers are beginning to recognize the fairness of this claim and they provide for a definite scheme of employment with guaranties of promotion to satisfactory employes. Such employment schemes are not practicable in concerns in which most of the employes are young people and in which there are a very small number of profitable positions.

The right kind of an employer should be willing to share with youthful workers the risks incidental to the employments which he has to offer. He will not offer the beginner a nominal wage with the statement that "the future depends upon yourself." Such an employer, though he knows the requirements of the service and the conditions for promotion, asks the worker to serve for a time at a loss and take all the risks for the future about which he knows nothing. If the employer knows that the applicant has a reasonable prospect of coming to profit in his service he ought to be willing to back up his judgment by paying a living wage during the breaking-in period; if he is not sure that within a reasonable time the worker can earn and will receive a fair return

for his labor, he should not by employing him during his formative period prevent him from gaining experience in some line which promises him ultimately a fair return.

The right employer is willing to share the risks of the employment in other directions. A manufacturer desires in his office an assistant who has a knowledge of Spanish. He asks one of his correspondents to take a course of instruction in that language. Now this knowledge may be of no value to the worker outside of this particular service; and, therefore, where this special equipment is of more value to the employer than to the worker, the fair-minded employer should be willing to share with the worker the expense of securing the additional equipment either in the way of an allowance of time or by paying a part of the expense or by guaranteeing increased wages.

The fair-minded employer also shares with the worker the risks incidental to the employment by so organizing the work that the possibilities of "lay offs" will be reduced to a minimum or by paying wages sufficiently high in seasonal occupations to permit the worker to escape the debilitating effects of a combination of "lay offs" with a period of partial starvation.

The right kind of an employer, moreover, is willing to make a definite contract and to observe the conditions of that contract. The old-time employer who accepted an apprentice was compelled to make a contract for a definite number of years and to teach him the whole of a trade and to pay him according to an agreed scale of wages as well as to guarantee him his maintenance. The contract was signed before an officer of the law and was enforceable. In this day it is important that

the contract with the office boys should state the hours of work so that the youthful employe may make and meet his engagements for taking special courses of instruction to prepare himself for a man's work as soon as he has outgrown his boy's job.

A desirable employer is one who has a flexible organization; that is, one who is willing to contribute to the development of his workers by shifting them around from one kind of work to another. In inquiring into the reasons for the stupidity of a boy, it was found that from the age of sixteen to twenty he had been doing nothing but turning the threads on the barrels of fountain pens for ten hours a day and six days in the week. Such work has a tendency to wear a growing boy out in part and to permit him to die out in other parts of his physical makeup and the mental effects are not less deteriorating.

The man who has a flexible organization and fills his higher positions by promoting those who have been developed in the lower grades of his service is not the one who frequently advertises for experienced men; who expects to take away from others those who have been partially trained. By the latter method an employer usually gets those who have been eliminated from the working forces of other establishments for some reason or other, and any considerable number of such floaters in a business organization does not usually add to the value of that organization as a wholesome environment for a beginner.

Nor does it follow that the place in which the largest number of persons is employed is the most desirable. In the large organizations the routine worker rarely gets a chance to have the responsible heads become ac-

quainted with him. In one of these establishments, a young man who desired to become familiar with a variety of work discovered that it was a good plan after having secured what experience he could get in one department to give up his job and apply later for work in another department as a stranger. This was easier than it was to get a transfer from one department to another.

In the smaller organization there is a chance of being assigned to a greater variety of work—a better chance of observing workmen on different kinds of work and of having your own work noticed by the man in charge.

The right kind of an employer is one who encourages his assistants to do some independent thinking. "How were you able to advance yourself so rapidly?" was asked of a young man who had attained a responsible position with a public service corporation. "After I went to this place from school a merit system was inaugurated and cash prizes were offered to the one who made the best suggestions for improving the service. By winning several of these prizes I attracted the attention of the manager and I was just pushed along."

The right kind of an employer is not the one who expects to find old heads on young shoulders and ever ready to add to the discouragements of a youth by firing him because of those shortcomings which are characteristic of immaturity. One of these has been well described by a boy who gave as his reason for leaving a position: "The boss never notices a fellow unless he makes a blunder and always tries to make us believe that we are of no account so that we will not ask him for a raise."

The right kind of an employer has a proper respect for a boy's religion. One of them states it in this way: "I am willing to dispense with the services of a boy for the few days in each year on which he is impelled to observe the fast days which are prescribed by the church of his parents. Young people who are loyal to their church and their parents are more likely to be loyal to the interests of their employer."

The best environment to insure the proper development of a boy is in the service of an employer who has a regard for the dictates of his own religion. Said one boy: "I left because I was frequently asked to falsify the bills of materials furnished to contractors." It is not well for a young man to get the impression that misrepresentations are the order of the day among business men.

Of course, it goes without saying that such an employer is as loyal to the interests of his humblest servant as he expects that servant to be loyal to his own interests. A man who employs many boys in a commercial agency in which the propects are not good encourages his boys to prepare themselves for other and more promising lines of work, and uses his wide acquaintance among business men for the purpose of placing those who have outgrown his service into more promising lines. He has made a reputation that enables him to secure the better class of boys and to secure more devoted service. He says it pays him.

The employers who are living up to these requirements are becoming more and more numerous every day, but they do not have to seek applicants for the vacancies which occur. They usually have waiting lists on which are placed the names of the friends and ac-

quaintances of those who have tried their service and found it satisfactory. The problem which is before every worker is how to deserve such employers as have been described. In the next chapter an effort will be made to show how they may be found.

SPECIAL REFERENCE

Bulletin No. 123, U. S. Bureau of Labor. Washington, 1912. Employers' Welfare Work.

TOPICS FOR STUDY

Sick Benefits.
Profit Sharing.
Corporation Schools.
Satellite Cities.
Bonus Systems.
Promotion Schemes.

CHAPTER V

Finding the Opening

A young man may have discovered in himself the elements of potential values, have developed them to some extent, formulated very clear notions in regard to his purposes, immediate and remote. Upon finding that he must go out of training into gainful occupations, he may have determined what kind of employer would be most helpful to him in carrying out his purposes, but he must learn how to make himself known to such an employer.

There are many ways in which he may make a reputation for himself. More and more school records are being considered by employers as evidence not only of attainment but of character. If a student has finished the prescribed courses of study in the usual period of time, it is taken as evidence not only that he is diligent but that he has the strength of character to bring to a finish what he undertakes; if he has readily adjusted himself to the machinery of the school and formed the habit of getting along with his associates, employers will conclude that he will be able to obey orders in shop or in the office and to adjust himself to his fellow-workers; if he has shown himself amenable to discipline in school, he will have accumulated the good opinion of many teachers who number among their associates men in responsible business positions to whose attention they will be glad to commend him.

In his social relations, likewise, a young man may

so conduct himself as to secure a favorable introduction to industry. A successful manager of an importing house relates that after being graduated from school he was invited to take a trial position with a leading house because the manager had noted his activities as assistant secretary of the Sunday school in which his wife had been particularly interested.

Those who have their entire fortunes invested in business enterprises upon whose prosperity the income of their families will depend after they are compelled to retire must be on the lookout continually for promising recruits. The managers of leading firms of architects regularly visit the exhibitions of the classes in architectural drawing, and the employment managers of large corporations make the rounds of the colleges about graduation time to study the records of the graduates.

The graduating class of one southern high school made such an interesting study of the industrial possibilities of their own city that the employers of the city eagerly competed with each other for the services of the members to their no small profit.

A young dentist attributed his success to the fact that by the time he was ready to practice he had accumulated a large number of interested friends through his activities in neighborhood affairs. A young lawyer who lived in a suburban district explained that even while he was attending law school he made it a point to be agreeable and serviceable to his fellow commuters.

The boy who grows up in those sections of the city in which most of his neighbors are of the working classes also has opportunities to become acquainted with those who may be helpful to him later. He can learn how the brothers and the fathers of his associates have

succeeded and of the conditions and the prospects in those employments in which they are engaged. He will find a more neighborly disposition among them than among those in more comfortable circumstances.

If at the outset he must accept some less desirable position, the young man will use every means to find out what firms offer the best conditions of work. Most of the workers in special lines have their own organizations. In his association with his fellows in these organizations, he will learn of the conditions which prevail in different establishments. With the best firms he will do well to file formal applications for work, calling attention to these from time to time by letter.

These letters of application should be prepared with special care and in such a way that they may be filed by the employment managers. Boys complain because they sometimes write scores of letters to none of which they receive any replies. An employer knows that in the course of their elementary schooling, every student receives a total of several hundred hours of instruction in penmanship and considerable practice in letter-writing. If a letter is evidence that the writer has not formed the habit of making any one of the letters of the alphabet correctly according to any of the standard forms, the conclusion is warranted that he is either careless or unteachable; and if the letter gives no evidence of care in the selection of writing material, the conclusion is that the writer has never formed the habit of taking pains.

A letter should contain everything about the applicant which the employer needs to know in order to form a correct estimate of the writer's qualifications for the work under consideration: his native abilities, his gen-

eral education, his special training, his experience, some intimations of his outside associations and interests, and enough about his history to convey some idea of his character. All statements should be accompanied by corroborating evidence. Copies of commendatory letters from influential persons or from customers of the firms to which application is made will be helpful.

The thoughtful boy will be careful to preserve all his school reports, especially certificates showing that he has completed courses of study and training in vocational subjects, for use with letters of application.

The same care should be observed in making statements in interviews with employers as in writing letters. Young persons will find it to their advantage to have older persons present with them when they interview prospective employers. Employers will be favorably impressed, if they find that some older persons are interested in the business recruit and they are usually inclined to make more definite statements in regard to the conditions which they are willing to offer.

Careless statements in letters or in interviews may bring unexpected results. A young man misstated his age in his first civil service application and was ever afterwards debarred from such examinations. One who applied for a position in a chemical laboratory made unwarranted statements in regard to his training for such work. In the course of his interview with the chief chemist who at the time was engaged in an experiment he was asked to get for him a beaker of distilled water from a vessel. The boy uncovered the vessel and dipped out the water instead of drawing it from the faucet. He could never understand why he was told that he would not do for the place. Another stated in an inter-

view that he was graduated from a school which he attended only for a short time. He was disappointed when upon his return for a second interview, the employer who had in the meantime applied to the school for the boy's record, refused to see him. Statements in regard to previous employments are carefully investigated by discriminating employers, and he who works for some years without accumulating marketable references will find difficulties in getting a hearing from such employers.

Inasmuch as the responsible managers of industrial and commercial establishments change frequently, it is desirable at all times for a worker upon leaving any employment to secure a statement setting forth his experience.

In European cities, each workingman has a book in which his successive employers, at the time of his separation from a position, are required to write statements setting forth how long he had continued with them, the kind of work upon which he was engaged, and the character of the service rendered, so that at all times the journeyman has a record of his progress.

As a rule general letters from teachers are not of much value. The prospective employer wants to know whether any responsible person who knows the applicant thinks that he is fitted for the position for which he applies. When such a letter is desired from a teacher, to enclose with a letter of application, the student may ask for a sheet of the official school letter paper, copy on it a properly addressed letter similar to the one on the next page, ask the principal or teacher to sign it, making only such statements as he knows that his sponsor is willing to sign.

Brooklyn, N. Y. July 16, 1909

Mr. James Monroe
Manager of the Lookout House
Summitville, Vermont

Dear Sir: Henry Hudson informs me that he has applied to you for a position as stenographer to your guests.

Henry has been a member of this school for three years and has won the good opinion of his teachers and the respect and esteem of his fellow students.

He is punctual in the performance of his duties, careful in obeying instructions, and anxious to do well what he undertakes. He is careful of his personal appearance, respectful to his superiors, and considerate of his associates. We have always found him truthful and honest and we believe that he is reliable and trustworthy.

As you will note by this letter, he writes a neat hand. He expresses himself in good English, and understands thoroughly the rules of English composition. He is accurate in the use of figures, and has some knowledge of French and German.

He has completed his course in stenography and typewriting and has had a few months' experience in connection with a law firm of this city.

We have every reason to believe that he will please you and render you satisfactory service.

Respectfully,
Harold Bronson,
Teacher of Stenography.

Free employment agencies are maintained in eighteen states but these are concerned chiefly in handling manual laborers and farm help. The free city employment bureaus are overtaxed with swarms of casual laborers

and the unskilled. Most of the commercial schools, colleges, and vocational schools are in positions to help their graduates to find openings and the skilled worker will find that the trades unions maintain efficient and helpful bureaus for their members. Highly skilled and specially trained workers will find it helpful to advertise for positions in the periodicals which are devoted to their specialty.

These employment agencies and the employment offices of large corporations have their special blanks which applicants for work are required to fill out, and they have their own methods of interpreting what the applicant writes upon these blanks and of forming estimates of his character by the way in which he goes about filling out these blanks. Blanks which are carelessly or thoughtlessly filled find their way to the waste basket and others are preserved in permanent files for future consultation.

One ambitious young man who had been graduated from a course in salesmanship had neat filing cards printed setting forth his qualifications and having on it his photograph. These he mailed to a score of first class houses asking them to file them against the time when they needed additional men and then to mail him an appointment for an interview. His business-like method secured him a choice of positions.

As an indication of what items are desired by employers there is presented on the next page a condensed collection which has been made from a number of blank forms.

APPLICATION FOR EMPLOYMENT

1 Date..... *(To be filled out by Candidate)* 2 School No.....

3 Last Name 4 First Name 5 Address 6 Date of Birth 7 Place of Birth 8 What day school attended last? 9 Grade when leaving? 10 Reasons for leaving? 11 Favorite studies? 12 What languages can you speak? 13 Read? 14 Write? 15 What knowledge of bookkeeping, mechanical drawing, chemistry, designing, dressmaking, cabinet work, printing, forging or other subject of practical use, have you? 16 Shorthand system? 17 Speed? 18 Typewriting machine? 19 Speed? 20 What business experience, if any, have you had? 21 Names of former employers? 22 What kinds of work preferred? 23 Wages expected? 24 When begin? 25 What is your aim as to life occupation? 26 State, if you wish, church or Sunday-school you attend? 27 What evening or other schools than one mentioned above have you attended? 28 What evening or continuation school will you attend? 29 Father's name? 30 Father's occupation? 31 Father's business address? 32 Father's nationality? 33 Height 34 Weight 35 Hearing 36 Sight 37 Health 38 Disposition 39 Perseverance 40 Reliability 41 Alertness 42 Punctuality 43 Regularity 44 Other characteristics 45 Occupations recommended

(Signed) ....., Principal

46 RECORD OF EMPLOYMENT

DATE BEGIN	NAME OF FIRM	ADDRESS	KIND OF WORK	WAGE	ESTIMATE OF EMPLOYER	ESTIMATE OF EMPLOYE	LEFT WHY?

47 NIGHT OR CONTINUATION SCHOOL ATTENDANCE

DATE OF ENTRY	SCHOOL	SUBJECTS OF STUDY	ATTENDANCE	DEPORTMENT	SCHOLARSHIP

REFERENCES

Blackford, Catherine M. H. Fitting a Man to His Job. McClure's, 41 : 50.

Fowler, N. C. How to Get and How to Keep a Job. New York, 1907.

Hall, S. R. How to Get a Position and How to Keep It. Funk & Wagnalls, 1908.

Henderscott, F. C. Methods of Selecting Men. Proceedings of Society of Corporation Schools, 1913.

Murphy, C. D. The Man for the Job. System, 23 : 402.

PRACTICAL STUDIES

1. Write supposed interviews between yourself as an applicant and an employer who wants a draftsman, an errand boy, an office assistant, a mail clerk, a laboratory assistant, an assistant to the estimator in a contractor's office, a filing clerk, a shipping clerk, an assistant to the traffic manager of a factory, a bank messenger, an assistant to a cashier in a drug store.

2. Considering the form for application for employment given on the preceding page, determine what the manager will conclude by comparing item 6 and item 9; items 12 and 13; 22 and 15; 15 and 27. What will be inferred if the applicant fails to answer 23, 25, or 28? How will your teachers answer items 38 to 45 if the card is sent to them?

3. As a variation from the regular program of your literary or debating society or the regular assembly exercises of your school let one of the members interview and question applicants for imaginary positions, or, better yet, get some experienced employer to act as interviewer. Let the applicants give the names of some of their schoolmates as references and have the interviewer also question these.

CHAPTER VI

Getting Ahead

The exceptional person begins his preparation for a definite career at an early age. Few college students, even, have any well-defined plans at the time of their graduation, and of those who go to work at an early age, the wideawake come to the time when they begin to look at life more seriously to find that they must plan for some readjustment and make preparation for some more promising prospect.

The increase in the number of employments to which there is easy entrance, the overcrowding of those other occupations for which little preparation is required, the continual reorganization which is going on in business enterprises have all combined to make a period of great industrial instability. The thoughtful, normal young man realizes that to attain his greatest usefulness and the widest influence as a permanent factor in civic and commercial life, he must establish himself so as to be outside of the range of these constant changes. Even if he can command wealth this conviction forces itself upon him.

At this stage he wants to know what kind of education is most desirable, and where and how the most profitable special training may be secured. If he has not been at college, he must determine upon the value of a college education to him and study the characteristics of the different colleges. He wants to know the value of different kinds of special training, the location

of the schools for vocational and professional training, the requirements for admission and the relative cost of the different kinds of special training. To add to the confusion, while he is perplexed by these problems there will come to him all sorts of appeals from business and correspondence schools which are operated for profit and from experimental vocational schools whose managers must make a satisfactory showing to their supervisory committees.

If the young man has, perchance, some natural timidity, or if he has been employed in some specialized work that has narrowed his vision, he may postpone a decision or be deterred from taking any action to his subsequent regret. It may be helpful to present some methods of investigating these problems which must be different for each individual. This letter suggests the nature of the problem.

———— St., 6-10, 1904.

My dear Mr. Weaver:

Perhaps you have forgotten me. When I was graduated from high school and came to you with a doleful tale because I could not go to college to carry out my desire to become a civil engineer, you consoled me, planned for me and secured me a position in business. I have been advanced from time to time, am now twenty-one years old, have saved a little money, and our circumstances are such that my parents no longer need my assistance. I determined to go to college in the fall and I informed our manager of my intentions. A few days afterwards the president called me into his office, asked me fully about my plans, then turned about and offered to place me in charge of a new depart-

ment which they were organizing, assuring me of a permanent and fairly remunerative position if I would remain with the firm. The firm is strong, is rapidly advancing its business, and has connections with the leading employers in New York with whom my work in this department will bring me into contact.

Shall I give up my long cherished plan of going to college? I have argued myself to a standstill and must depend upon you to look at the problem for me. For any consideration that you can give me and any time that you can spare, let me thank you in advance, while I again express my gratitude for kindly help extended in times past.

Respectfully,

When, as is usual in such cases, a statement of this case was submitted to a selected group of men of sound judgment, the unanimous verdict was against advising the young man to go to college.

In the final analysis, however, the case appeared like this: the young man had worked hard during the time when his former associates were taking their college courses; he was planning to spend on his training his own earnings; having no obligations he could afford a college course as a luxury, as he could afford a vacation or a trip to a foreign country; he was risking nothing that was not his own; he was throwing away an opportunity as his employer told him, but having proved that starting as a poorly equipped boy at sixteen he could make himself a place in the business world, he had no need to fear that starting over again at twenty-five

with a professional education he might not do the same again. He was advised to go to college.

Having settled the question, he threw all his energies into his college work and because of his business training, his acquired habits of work, he became a marked man from the very beginning of his professional course. Upon graduation he accepted a position in engineering not so remunerative as the business position which he resigned four years before, but in less than four years he had succeeded far beyond anything he could have expected from his old employer.

It must not be inferred that any valid general conclusions are to be drawn from a case like this. It is merely given as an indication how such a problem may be seen from all sides. The failure of one university graduate or the business success of a single illiterate does not prove anything. General conclusions may, however, be based upon any statements which indicate the value of a higher education to large numbers of persons.

It is estimated by the United States Bureau of Education that of the 14,794,403 males over thirty years old in the country at the time of the investigation, 1,757,023 were without education, 12,054,335 had the equivalent of a common school education, 657,432 had a high school education or its equivalent, and 325,613 had in addition to a high school education a college or a professional education. A careful study of all persons who had achieved such eminence as to have their names recorded in "Who's Who" seemed to indicate that no person without education achieved that distinction; that the list included 1,368 names of persons who had only a common school education, 1,627 from the high school class and 7,709 from those who had attended college.

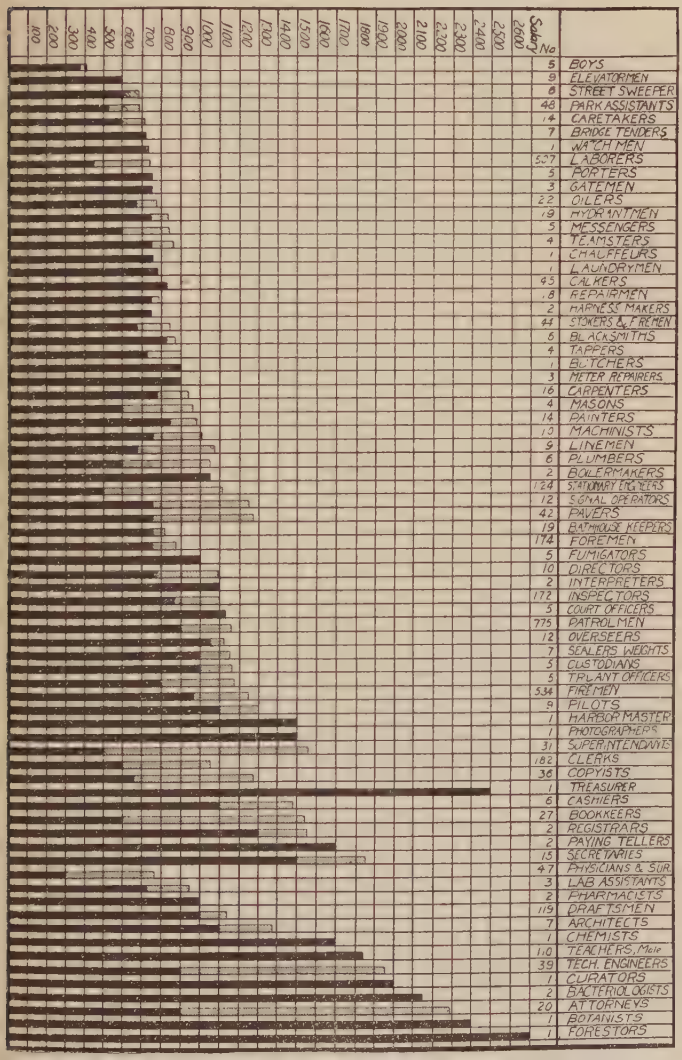
According to these figures, Chancellor Smith of the Randolph-Macon College, estimated that the boy with only a common school education had, in round numbers, one chance in 9,000 of becoming distinguished, that a high school education increased his prospects twenty-fold and that a college boy's chances were 200 times as good as those of the boy who stopped with the high school.

In recent years it has been so thoroughly demonstrated that a college course increases the chances of success in business as well as in the professions that in the period from 1900 to 1910 fully one-fourth of the graduates of Yale College elected business careers.

The market value of special schooling for the skilled trades is shown by the records of the graduates of the Williamson Free School of Mechanic Trades. During the twenty years preceding 1914 the average cost of schooling for all graduates was $390.16. In 1914, 73 who were in business for themselves reported average incomes of $2,848.07; 172 who occupied executive positions earned salaries whose average for both the older and more recent graduates was $1,890.20; 293 were working at skilled trades with average annual earnings of $1,072.05; 51 were employed as teachers in trade schools, averaging $1,349.09; and the 75 in other occupations averaged $1,213.15.

In regard to the chances for work, the records of the United States Civil Service Commission seem to indicate that there is less and less competition for vacancies which occur in positions requiring longer periods of preparation. In 1911 we find that without considering positions in newly organized departments, that only 3% of those who applied for clerical positions received appointments, while 12% of the applicants for

CHART SHOWING THE MINIMUM AND THE ATTAINABLE AVERAGE ANNUAL EARNINGS OF MALES HOLDING COMPETITIVE POSITIONS IN THE CIVIL SERVICE OF BUFFALO AND ERIE COUNTY, NEW YORK, 1913.



positions as civil engineers, 20% of the electricians, 50% of the fish culturists, 50% of the physicians were appointed within the year.

A complete tabulation of the minimum pay and the attainable average pay in each grade of the competitive positions in the civil service of Buffalo and Erie county for 1913 shows the comparative market value of different kinds of equipment.

A further summary of the same figures and figures showing the relative net earning capacities of different classes of workers in terms of life annuities purchasable at 30 producing the same excess during the productive period is given in the next table.

SUMMARY OF CIVIL EMPLOYES IN BUFFALO AND THE COUNTY OF ERIE FOR 1913

	Unskilled workers	Skilled or experienced	Clerks	Office workers with special training	Technically trained men
Number considered	655	1563	182	82	306
Average annual earnings	$729	1545	1050	1618	1948
Excess over earnings of unskilled	000	816	321	989	1219
Income producing power of excess equal to an annuity at 30 costing	000	16371	7342	20955	29952
Approximate number of years of special training necessary to qualify, including common school	8	13	9	12	16
Average value of each year of special training		$1251	816	1746	1872

It is easier to determine the value of a higher education than it is to select a college or a professional school. In the Annual Report of the United States Bureau of

Education there will be found classified lists of colleges and professional schools and the XXV Annual Report of the Commissioner of Labor at Washington gives detailed information regarding trade schools. From these reports and from the printed information which may be secured from colleges in answer to a post card request the requirements for admission may be determined, and also the cost of living and tuition, and the chances of earning while attending. Many of the schools supply directories of graduates from which it is possible to determine their business relations after their graduation. The school having the smaller number of students per instructor, the larger total income per student, whose equipment represents the larger investment, and whose graduates find themselves in the higher walks in life is the most desirable school. All these matters can be determined from the reports referred to. If the prospective student finds that some of the graduates of the school which he is considering live near him, he will do well to seek an interview with them in order to get such information about the necessary expenses and the character of the student body as he cannot obtain from the printed announcements.

Ideas in regard to the relative values of the small colleges and the large universities may be formed by reading in the Autobiography of S. S. McClure the accounts of his experiences in fighting his way through a small college, of the virile associations, and the intimate acquaintances which he formed with a small group of self-sacrificing and devoted teachers; and then reading "Stover at Yale" which gives an idea of an entirely different kind of young men who compose a part of the student body of some of our large universities.

A student when selecting a college must recognize that in estimating the cost of an education the largest item will be the earnings which he will lose by remaining out of gainful occupations for four years, and that by selecting a college in which the expenses are a trifle higher he will not be adding a very large percentage to the entire cost. Morover, if his college expenses are from $8 to $12 per week it will be poor economy to take any part of his time from college work to earn something in any of those occupations which bring small returns. It is much better to get the largest possible cash returns from his vacations and if his funds run low to interrupt his college course to replenish them.

Scholarships and loan funds are used so liberally in large schools that it may be accepted as possible for any young man who can assure his maintenance to secure access to their privileges; but it must not be overlooked that in accepting assistance he assumes obligations to make in the future adequate returns in favor of those whom his college may desire to assist.

Correspondence schools have done a great work in helping men of experience and ability to formulate their experiences, and to learn how new methods and scientific discoveries are to be applied to the work in which they are employed. They have helped others to acquire such systematic habits of thinking as they may have failed to acquire at the early age when they were compelled to leave school. It may be asserted, however, with emphasis, that what the correspondence school can do for a student in a field which is new to him is in no sense to be compared with the profit which may be derived from personal contact with a live teacher.

HELPFUL BOOKS

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QUESTIONS FOR DEBATE

1. That a boarding school furnishes a better preparation for college than a city high school.
2. That a college located in a small town has better advantages than one in a large city.
3. That a college which prescribes its studies is better than one which permits all students to take electives.
4. That a college training furnishes a better preparation for teaching than a normal school.
5. That the students of the country college take more interest in athletics and other student activities than the students of a college located in a city.
6. That a minimum wage should be prescribed by law for all occupations.

SUBJECTS FOR REPORT WRITING

1. Differences in the wages of carpenters and other workers in the building trades in New York, Philadelphia and Buffalo.
2. Possible average earnings of a worker in the silk industries of New Jersey; in potteries, in the making of furniture, in railroad employment.
3. Relative number of students per teacher in the colleges at Amherst, Dartmouth, Swarthmore, Colgate, and the comparative average income from all sources per student.
4. Comparative value of buildings, grounds and equipment of Columbia, Harvard, Yale, Princeton.
5. Average income per student in the Universities of Michigan, Wisconsin and Cornell, and tuition fees charged.
6. The colleges which offer the best opportunities for self-support.
7. Reports of interviews with graduates from colleges who were opposed to a college training as a preparation for business.

CHAPTER VII

Scientific Management

The magazines have had much to say about the methods by which the industrial managers obtain the maximum profit out of their properties. The man who has everything invested in himself may profit by the methods which prescribe that in handling property the best available thought is to be used to produce the maximum results with the minimum outlay. After a young man in accordance with a well formulated plan has acquired a full equipment of general culture, achieved a high degree of skill or gained the mastery of some special branch of knowledge, his careful management of himself will prevent him from lessening his vitality through the excessive demands of his employment, his eagerness to enlarge his intellectual equipment, or his desire to cultivate those extensive social relations so helpful to the young professional man.

The prudent general does not risk his resources in any undertaking beyond his strength; the wise engineer limits very carefully the load of his machine to its designed capacity. The young man who wishes to make the most of himself must be equally careful to respect those limitations which are imposed upon him by his physical condition and circumstances.

An ancient ideal prescribes one-third of the twenty-four hours for work; another third for recreation; the remainder for rest. All nature has its alternations of activity and repose, daily and seasonal. It is only within

recent years that labor has been so organized in some industries as to require long rounds of unremitting toil during the entire year. In some occupations even the daily period of rest has been unduly shortened.

That man is more efficient whose habits are the accumulations of his periods of intensive work. These periods should be comparatively short at the beginning of his productive period of life, gradually increasing as his power of concentration becomes easier. This has been recognized in making legislative restrictions for the hours of work in those occupations in which children go. It is well for the prudent young man also to establish for himself restrictions beyond which he will not go; restrictions against any interference with his hours of rest or recreation; restrictions against the improper use of his eyes; restrictions against undue demands upon his health as well as restrictions against social and intellectual dissipations.

Almost any young man who should happen to own a $10,000 horse would jealously guard him against undue exposure, noxious food, excessive work, or any other deteriorating influence. Being of greater value as an income-producing animal, if properly managed, he should be equally careful to see that he is housed in surroundings which are sanitary, permit of relaxation, provide good cheer, and wholesome food at properly regulated hours.

It is also well to call attention to the fact that one who has valuable possessions entrusts them only to the one who is an expert in their use and treatment. The human machine is most delicate and at times its preservation requires the command of a very large accumulation of knowledge; human relations are very complicated and

extensive laws have been framed to regulate a man's dealings with his fellows. Organized society has encouraged the training of experts and properly qualified persons have been duly licensed by the state to give advice and counsel and it is well for citizens to form the habit of depending upon these in emergencies. The army regulations prescribe periodical medical examinations of all the enlisted men in order that any symptoms of disease may be detected at the outset and defects in body may be remedied. The young workingman should be not less exacting with himself.

Through motives of economy, at the beginning of their wage-earning careers away from their homes, young men sometimes are tempted to subject themselves to deprivations. Instead of permitting themselves to deteriorate through poor living, they should follow the example of their enterprising fellows who provide for themselves during their college courses with proper maintenance at low cost, through their coöperative housekeeping clubs. In many cities there are helpful institutions whose aim is to provide homes and places of recreation for working boys. Their resources are usually very limited and the demands made upon them are unlimited. Instead of depending upon these, enterprising young men should provide for themselves, just as business men in all lines share the cost of facilities whose expense is too great for their individual resources. Men of judgment, experience, and reliability to advise in such undertakings can usually be found through the churches and settlement houses.

If, instead of being a sojourner in a strange city, the young workingman should happen to be living with his family in one of the poorer homes of the city, he

can sometimes lead in improving the living conditions of his entire family so that the home may become a proper place for rest and recreation.

Participation in the management of clubs through which they may provide themselves with homes, recreation centers, or study classes gives to young men opportunities to develop any latent talents for leadership. There are many such clubs. In some cities young men have combined to form junior boards of trade through which they take care of their own interests, much as the business men serve themselves through their chambers of commerce; the bank clerks in other places have a special institute for the instruction of their members; the draftsmen have their own society; and those who are engaged in other occupations have their mutual improvement clubs; in country sections, also, there are corn clubs, poultry clubs and fruit-growing clubs. These provide study and lecture courses for their members and organize their sports and excursions.

Not alone will his scientific management of himself prescribe for the young man a thrifty use of his physical powers, and a careful regulation of his associations, but it will likewise impose upon him the conservative use of his financial resources. A leading banking house, instead of starting boys at $8 per week, requires them to begin at $6 but surprises them at the beginning of a new year by informing them that they have to their credit deposits of $100 which may be withdrawn or allowed to stand to their credit, accumulating for them interest at the usual rate. Fortunate is the lad who leaves his enforced savings to his credit, thereby demonstrating to his employer that he possesses the desirable qualities for his permanent services.

Through the facilities which are afforded by the postal savings bank, with branches in each of the larger post offices the smallest savings may become a nucleus of an interest-bearing saving fund. Savings banks abound and the building and loan associations everywhere afford satisfactory machinery for the encouragement of thrift.

These small reserve accumulations are very helpful in slack seasons; a small fund of this kind in a period of unemployment may enable one to take the necessary time, incur any slight expense in order to investigate opportunities for work. Those who are compelled to accept any kind of work which may be offered to them are always at a disadvantage. Such a fund may also be of great value in times of ill-health by permitting full recovery before the resumption of work or by permitting needed vacations.

Larger funds as they accumulate may permit workers at opportune times to acquire interests in business enterprises or to purchase established concerns after they have secured the experience necessary to handle them.

The accumulation of a saving fund demonstrates the ability of a worker to manage his own affairs with prudence and good judgment. This commends him to his employer when positions of importance are to be filled by promotion. It also makes it unnecessary to borrow small amounts from shopmates and thus places him in a better position to refuse loans to the impecunious.

No less important for insuring his industrial stability is the matter of endeavoring to obtain such well-defined notions of his relations to his employer as will save him from being misled by extremists in times of industrial disputes. Upon his admission to gainful employ-

ments, whether he enters from the elementary school, the high school or the college, the young man will be disposed to feel that undue demands are made upon him. In his home his shortcomings have been tolerated and in the school others have been held responsible for his progress. Neither in the shop nor in the office is there likely to be anyone whose chief business it is to direct him, none to encourage him; the blame which is visited upon his mistakes is usually severe, and besides, in most of the employments in which beginners go, they will be associated with those who have allowed themselves to stagnate in the lower grades of service. Such are generally disgruntled both with the work and the management. They may imagine that they see in the new recruit, particularly if he is energetic, such a formidable competitor that they will consider it good policy for them to persuade him that the place offers poor prospects.

If he is in the office and becomes familiar with the operations of the business and learns the cost prices of merchandise, he may overestimate the profits and the abilities of the managers to pay him the larger wages which he covets, forgetting the many incidental expenses, the large costs of insurance, and the importance to the stability of the business of maintaining reserve funds against periods of depression. Likewise a little training in the way of bookkeeping will enable him to see that what a business pays in petty expenses cannot be used to increase salaries and that the wasteful practices of which the employes in many offices are guilty are generally paid out of salary increases which are never made. Many office workers who would not think of stealing a dime, do not hesitate to use need-

lessly the expensive telephone service, waste postage stamps and use office stationery for private purposes. In the course of time such little oversights weigh unfavorably against them.

STIMULATING BOOKS

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Stockwell, Herbert G. Essential Elements of Business Character. Revell, 1911.

Tolman, W. H., and Guthrie, A. W. Hygiene for the Worker, A. B. C., 1913. An elementary text-book on safety methods and devices.

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EXERCISES IN REPORT WRITING

Look up some name in the first column in your encyclopædia and select some incident in his life that shows that his success was determined by the possession of one of the list of virtues or qualities in the second column.

Abbott, Jacob	Courtesy
Akers, Benjamin P.	Diligence
Bancroft, George	Diplomacy
Beaumont, William	Economy
Belzoni, Giovanni B.	Energy
Bigelow, Erastus B.	Enterprise
Bogardus, James	Fortitude
Brooks, Horatio G.	Generosity
Carey, Matthew	Honesty
Chesborough, Ellis S.	Independence
Courten, William	Industry
Draper, Lyman C.	Ingenuity
Emmet, J. K.	Integrity
Faunce, John	Love of Nature
Field, Marshall	Loyalty
Fitch, John	Native ability
Ford, Melbourne H.	Organizing ability
Garnett, Charles F. M.	Originality
Gillott, Joseph	Patience
Green, George F.	Persistence
Hand, Daniel	Piety
Hunter, William	Reliability
Lea, Isaac	Self-reliance
Lick, Joseph	Sincerity
Muspratt, James	Sympathy
Olney, Edward	System
Shepard, Charles W.	Temperance
Waring, George E.	Thrift
West, Benjamin	Truthfulness

CHAPTER VIII

Labor Laws and Labor Contracts

Until very recent times, the common law, that body of customs that has received the sanction of the English and American courts, was deemed sufficient to adjust all differences between an employer and his workingmen. They guaranteed to workingmen the right to hire themselves to any employer engaged in doing that which is lawful and not contrary to the public policy. A contract made for doing work, whether in writing or by verbal agreement, can be enforced through the courts and if the wages are not specified, the court fixes what is considered reasonable. Wages may be collected by law and claims for services must be paid before any other claims against an employer are paid. A workingman has a right to demand cash and refuse orders for merchandise in payment for services. The present law in many of the states requires that such wages shall be paid no less frequently than twice a month.

The law also protects workingmen in their demands, for permission to attend the polls on election day, to perform their duties as members of the national guard, and their right to become members of protective organizations, but enjoins them from interfering with others in the discharge of their duties to their employers. For the further protection of those for whom these laws have been made, there have been established in large cities, legal aid societies from whose officers advice may be secured, either free or on payment of small fees. The

addresses of such societies are given in the city directories.

In the greater complexities of the industrial life of the present day the maintenance of the public peace and the promotion of the public welfare has made necessary the legislative regulation and state supervision of labor matters.

The state governments have established bureaus of labor for the purpose of collecting information regarding the conditions among the working classes. These bureaus are intended to supply information to any of the citizens who may make inquiries in regard to the prevailing conditions. In some states there are special departments for mediation in labor disputes and for the adjustment of claims. Dissatisfied working people whose employers are unwilling to listen to their grievances have a right to present these grievances to this department, whose business it is also to try to settle strikes. In order to handle these matters wisely, many states have found it necessary to organize special bureaus of labor statistics. The annual reports of many of these bureaus contain much valuable information regarding the conditions of work, the hours of labor, and the rates of wages. To correct unsatisfactory conditions many laws have been passed during recent years. To enforce these laws, factory inspectors and inspectors of mercantile establishments, and mines, are employed by the state governments. These factory laws require that wholesome and sanitary conditions shall be provided for workingmen; that a sufficient number of toilets, washrooms, and dressing rooms shall be provided; that walls and ceilings of rooms shall be kept whitewashed or painted, when this is conducive to health and cleanliness; that

the floors shall be kept in safe condition, and clean, and that receptacles shall be provided for waste and refuse. These laws also provide for the construction of safeguards to dangerous machinery and to elevator shafts. Penalties are prescribed for those who are guilty of interfering with safety devices. Warnings must be placed over dangerous machinery. In manufacturing processes creating dust or harmful gases these must be carried out of the workroom by exhaust fans, which must be kept in operation during working hours. Communication must also be maintained with the power rooms, so that the machinery may be quickly stopped in case of accidents. It is also required that a sufficient number of exits and fire escapes shall be provided, so that buildings may be emptied quickly in emergencies. Where the fire departments require it, accessible fire apparatus must be installed.

For the purpose of regulating wages a few of the states have appointed minimum wage commissions. In Massachusetts such a commission is authorized to forbid the payment of wages below a determined reasonable rate, as soon as it may be found that the payment of such wages can be enforced without detriment to the industry. The workingman's compensation laws of New York and Massachusetts and New Jersey provide that, for injuries or accidents causing death, unless such accidents are the result of the willful negligence of the victim, compensation shall be paid to the workingman or his representative from a fund to which all employers must contribute. Persons engaged in farm labor, in domestic service, or any public service, or in connection with any business not operated for profit, are excluded from the benefit of these laws.

These laws vary greatly in different states, but it is unwise for a boy to accept employment where the working conditions or the restrictions are not up to the standards set by the laws of those states which have made the matter the subject of public discussion. In most of the states the minimum age at which children may be employed is 14 years, and the laws specify that children between the ages of 14 and 16 may not be employed in dangerous occupations nor during the school term, unless they have received working papers or employment certificates. In some of the states these working papers are issued by the boards of health and in others by the boards of education. Information in regard to the methods by which these may be obtained can be secured from the principal of any public school.

The most progressive states require that the boy who desires to go to work must prove that he is able to read and write simple sentences in the English language and can perform the ordinary processes of arithmetic, and that he is strong enough physically for the demands of the employment which he expects to enter. For the children under 16 years of age a New York law limits the working day to 8 hours, and the week to 48 hours, and prohibits night work for children under the age of 16. The same law also limits the working days for boys between the ages of 16 and 18 to 10 hours for 6 days, or not to exceed 12 hours if the employment is only for 5 days a week. Overtime may be required not to exceed 3 days a week when a Saturday half holiday is given. The schedules of working hours must be posted, and the posted schedules must be adhered to. In New York when overtime work is for more than an hour after 6 P. M., an intermission of

20 minutes shall be allowed. Most of the states have laws restricting Sunday work to work of necessity or of charity. These Sunday laws are not very strictly enforced, but there is a tendency to require for all employes in what are called continuous employments one day of rest out of every seven.

All this legislation and the expensive systems of factory and mercantile inspection will prove but partially effective without the coöperation of the workingmen. Enforcing the construction of safeguards to machinery will not protect the man who removes the same when they hamper his movements. Sanitary supervision will not protect against the diseases which are common to some occupations if the workingman in his haste eats his lunch without washing his hands, drinks water from unclean cups, fails to change his working clothes for his street clothes at the close of the day, or permits his associates to befoul the premises of his employers; and no elaborate system of fire protection will ward off the possibilities of danger in places where the careless use of matches and lighted cigars and cigarettes is tolerated by the employers.

Inasmuch as the number of inspectors for supervising the enforcement of these laws is generally inadequate, improvements will be more certain if workingmen themselves will insist on the legal requirements and report violations to the proper officers. "Safety first" by the workingman should be demanded of his employer but also of his associate, and most emphatically should he demand it of himself.

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QUESTIONS FOR DEBATE

1. That farm laborers should come under the workingmen's compensation law.
2. That the minimum age for the employment of children should be sixteen.
3. That all children between the ages of fourteen and sixteen should be compelled to attend special Saturday classes in the commercial high schools or the trade schools.
4. That old-age pensions should be provided for all workingmen by the state.
5. That the arbitration of labor disputes should be compulsory.
6. That the legislature should provide by law for joint committees of workingmen and employers in each trade with power to fix wages and hours of labor.
7. That members of trades unions and employers' associations should be permitted to elect special representatives of their respective bodies to the legislature.

CHAPTER IX

From Fourteen to Sixteen

The various phases of the problem of boy labor have been the subject of much consideration during the last few years by individuals and public commissions. All agree in emphasizing that no sacrifice of money or convenience should be spared in order to bring about such changes in education and in economic and social conditions as will be necessary to save the boy from the deteriorating effects of intense labor too early in life.

Students of the subject regard boy labor as a source of unemployment. The boy of 14 leaving school usually finds nothing before him but "blind-alley occupations." These afford him a remuneration quite satisfactory for a time. In a few years, however, they throw him into the labor market with no more industrial training than he had when he entered the occupation; and because of the lack of foresight, supervision, discipline, and training in self-control that usually accompanies the "blind-alley occupation," he is unable to make the necessary readjustments later. "At the point of stress" he is likely to become discouraged and after trying several different occupations he finds himself so badly handicapped that he falls in line with those who because of inefficiency, carelessness, or indolence are forced by competition into the ranks of the unemployed.

Arnold Freeman in "Boy Life and Labor" says: "If 'the point of stress' set up at 18 or 20 were the only consideration, the evils so caused would not present

a momentous social problem. The real issue is far more complex and extensive; and it is associated not so much with the problem of unemployment as with the general low level of efficiency and prosperity of the community. What we need to consider is not the sacrifice of a certain number of youths through faulty industrial arrangements but the lack of training and the manufacture of inefficiency in the majority of boys between school and manhood."

From statistical sources we learn that from seventy to eighty per cent. of the boys leaving the elementary schools enter unskilled occupations. The boy at 14 in going to work quite naturally rejoices in being released from the discipline of the schools. With spare time on his hands, unfavorable environment, no educative work, and the absence of high ideals, as is usually the case in the occupations open to him, there is a strong probability that his course will be directed towards evil. At this most critical period of his life he needs guidance and care in order that he may properly develop, physically and morally.

R. A. Bray in a recent work on Boy Labor says: "The boy loses the results of his training in the elementary school; the habits of obedience, regularity, and industry are dead; the bright intelligence is dulled and with the coming of dullness goes the power of learning. He loses his prospects; his future is the future of unskilled labor, and unskilled labor robbed of the grit and alertness which alone can secure for unskilled labor the adequate rewards of permanent employment at a steady wage.

"And in thinking of the deterioration and of that hopeless future which that deterioration involves, we

must never forget that it is not a mere handful of lads who suffer in this way but that the boys who leave the elementary school start on a dreary journey, and so starting bid fair to reach a dreary end."

Even if the "blind-alley occupations" could be transformed, the fact still remains that the impressionable period of adolescence is being sacrificed to immediate profit in industry, instead of being used for training and development.

Juvenile Delinquency and Its Relation to Employment was made the subject of Vol. VIII of the Report on the Condition of Women and Child Wage-earners of the United States to the 61st Congress. The object was to discover what relation exists between juvenile delinquency and employment or non-employment. The study is based upon the court records of Indianapolis, Baltimore, New York, Boston, Newark, Philadelphia, and Pittsburgh in the year 1907-1908. The total number of delinquents included in the study was 4,839, of whom 2,767 had at some time been employed and 2,072 had never been employed. The entire number of offenses recorded for all was 8,797, of which the working children committed 62.2% and the non-working children 37.8%. The ages of the children ranged from six to sixteen. The report says: "When it is remembered that a majority, and presumably a large majority, of the children of these ages are not working, the preponderance of offenses among the workers assumes impressive proportions. The conclusion seems to be inevitable that the fact of being at work constitutes an important element in the problem, and that because they are working, the working children, rather than school children, are far more likely to go wrong than those

who can enjoy a childhood unburdened by adult responsibilities."

Let no one interpret these facts as a reflection on all boys who leave school to go to work. Some are compelled to enter the industrial world at an early age. Many of them by strength of character rise above their environment; they surmount every difficulty and to their honor and their credit become exemplary men.

By far the larger number of boys from 14 to 16 go into work as messengers, errand boys, and delivery boys. This work can be done by them, but it affords them employment for merely short periods of their lives and affords them no training that fits them for any other occupation. Mrs. Florence Kelly says: "The test of the work, however, should not be whether boys can do it, but what it does for the boys."

Messenger boys frequently have time on their hands during which they associate with undesirable companions and acquire bad habits. Fortunately, in recent years, there has been a tendency to exclude them from employment in night service. In the state of New York this is forbidden by law. It has been found that they have frequently been sent to deliver messages to the worst dens of vice.

There are many temptations connected with the errands and delivery service because of the frequent opportunities to practice deception and dishonesty. The tables given in the report of Juvenile Delinquency and Its Relation to Employment show so large a number of delinquencies for this class of boys coming from fair and good homes that the presumption is strong that the occupation is especially hazardous to good morals. The irregular hours and the irregular meals frequently

necessary in the service render it trying to the health.

Newspaper selling, peddling, and bootblacking are known as street trades. The boys who follow these occupations have opportunities for congregating with others on the street and for learning the worst that the streets have to offer. The court records show that the number of delinquents among those engaged in these occupations is large in proportion to the whole number engaged in them.

Service in stores and offices may open the way for boys to some promising prospects. It affords some training and in many cases opportunity for promotion. Even if there is no such opportunity the training received is of advantage as a preparation for other positions that may be open to the wideawake boy.

That there is a tendency on the part of employers to eliminate children from the organized industries is indicated by the returns of the thirteenth census. From 1900 to 1910, the number of boys under 14 employed in New York City decreased 28% although the population in the same time increased more than one-third; in Philadelphia the decrease was 22%; in Chicago, 24%; in Buffalo, 55%. More and more the home is again being so managed that the boy by his labor during certain parts of the day can contribute something to the support of the family by helping to reduce the expenses of the home.

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PRACTICAL EXERCISES

The number of boys of the ages over 14 but under 16 years of age in New York City in 1910 was 85,332. Of these there were in attendance upon the elementary schools, 30,970; high schools 10,537; all other schools, 15,534; according to the census figures 8,973 were messenger or delivery boys; 1,630 were working in factories; 2,388 were helpers or apprentices in skilled trades or in professions; 2,089 were salesmen or clerks in stores; 2,270 clerks in offices; 215 were stenographers or telephone operators; 244 bookkeepers; 2,887 laborers. Arrange this in the form of a diagram and make a similar diagram for your own city.

CHAPTER X

Manual Labor

It has ever been that some of the most important work of the world has had to be done by the "hewers of wood and the drawers of water." The wood is now shaped by machines and the devices for drawing water are innumerable; but in our cities fully one-fourth of all persons engaged in gainful occupations, and in our country districts a much larger proportion, earn their living by the work of their hands.

The men who have done the manual work have ever been held in great respect; they have always had certain advantages over their neighbors in that they have been able to turn their hands to many forms of work. Even frail men without any inclination for brain work have supported themselves through manual labor and laid something by with which to enjoy that vigorous old age which often is the lot of those who live a life of physical activity; others, whose minds in their youths have been sluggish, by learning how work could be done to the best advantage and how workmen are handled, and by thinking about their work have later been brought into prominence as supervisors or employers of others in the execution of important undertakings.

All the work of this kind which can be done by boys below the age of the fuller maturity which comes at eighteen or twenty has been in connection with shoe polishing parlors, the delivery of newspapers, on the delivery wagons of retail stores, and in shipping and

packing rooms. Some wideawake boys have made these occupations lead to profitable work. An Italian lad who had been working for four years in a shoe-cleaning parlor, leased a shop of his own, making with his savings a small payment on his furniture. After he had attended strictly to business for six months he had worked up his income above his expenses to $12 and, after a year, with the assistance of the helpers whom he employed, he was clearing from $18 to $20 a week. A young Swede who had learned to care for horses, and something about the express business, began for himself what later became a local express business of no mean proportions and yielding no small profit.

After reaching his full bodily strength, the young man has a choice of a large number of occupations and as a manual laborer he can find work wherever he goes. As a helper on a farm, or in a dairy or in a market garden, a florist's garden or a greenhouse he will be able to earn a little more than his expenses. Work of this kind pays from $12 to $20 per month, depending upon experience. It can generally be found in the spring or the summer by the insertion of an advertisement in an agricultural journal. If he is fond of outdoor work and does not care to leave the city, work may be found in connection with the express companies, garages, or livery stables, in which he begins as a helper receiving from 12 to 20 cents an hour and later becomes a driver; or if he takes lessons in auto-engineering, he may become an auto-truck operator and earn from $15 to $20 per week. The people with whom he associates are perhaps rough but usually friendly. The temptations to fall into bad habits are as in every occupation engaging large numbers of men whose opportunities for recrea-

tion are limited. It takes a boy of strong character to resist these.

For those who can stand more confinement, there is work in connection with the care and oversight of large office buildings, warehouses, stores, hotels, and public institutions. A young man of good judgment and stability may readily find a place as an elevator boy beginning at the age of eighteen, at from $8 to $10 per week and working up in a busy office building to $15 and perhaps to $20. The hours are usually long, but there are chances of observing the habits of business men and of attracting their favorable attention. Those who are engaged in this work, as well as janitors' assistants, whose wages are about the same, have opportunities to prepare themselves for responsible positions as head janitors or superintendents of buildings, public or private. To qualify for the best positions of this kind, in which the pay is from $75 to $100 per month, a man should have a wide knowledge of science as applied to the management of buildings, he should know something about heating and ventilating systems, something of building trades and enough of electrical installation and sanitation to enable him both to see when the buildings are out of repair, and to supervise workingmen who make the repairs. Evening courses in plumbing, sanitary engineering, or any of the building trades will prove helpful. If these cannot be had, money spent in correspondence courses will prove a good investment.

The workman who begins as a fireman or an oiler to a good stationary engineer has chances to secure a license for operating an engine. It will help him if he will take a course in steam engineering; stationary engineers

earn from $18 to $25 per week; they must secure a license from the city to serve as such.

The young man who lands in a strange city, is not familiar with the streets, and perhaps does not know the language, is more limited in his choice. If he has certificates of character, he can usually find work as a porter in a building, a helper or a packer in a shipping department of a mercantile house or in the baggage room of a hotel. Such positions demand that those who fill them shall be able to learn the routine of their work and exercise care and dispatch in doing it. All such work yields usually the laborer's pay of from $1.50 to $1.75 per day. A course in bookkeeping in an evening school may secure him a position as shipping clerk at about the same pay, or perhaps a little more, in easier work, and with better prospects to advance to more profitable positions.

The more responsible of the workers about these buildings may be advanced to positions as watchmen. The night watchman earns $15 per week, and the young man who works on the force of cleaners has usually afternoon and evening employment so that he can take a part of his day to prepare himself for better paying work.

More steady work is found in the street cleaning departments of the large cities. Steady, healthy men to the number of 3,000 are employed in New York City. They begin at $780 per year. By efficient work and careful attention to business they may win promotion to positions as drivers at $800, section foremen at $900, or inspectors at $1,200; a few stable foremen are paid as much as $1,500 a year and all receive additional pay for Sunday and overtime work.

Laborers of good general intelligence are also employed in other departments of the city government; in the Department of Public Buildings they constitute the janitorial force; in other departments large numbers are employed to do general work and to act as messengers. These laborers are paid from $2.50 to $3.00 per day. If they prove their capacity they may be promoted to positions as messengers and guards. These are paid in New York City annual salaries ranging from $900 to $1,500.

Intelligent laborers are needed as helpers to mechanics in all kinds of building operations. The wages paid to these in these in the Department of Docks and Ferries and the Department of Water Supply are $2.50 and $3.00 per day, with opportunities to learn enough of the trade to pass the examination for the more skilled work and higher pay.

There is a continual demand for manual laborers in mines and quarries where the most intelligent can acquire an experience which with suitable correspondence courses will enable them to qualify as mine inspectors. In connection with salt wells, oil wells, meat packing establishments, sugar refineries, paint, soap and fertilizer factories, brick yards, and lime kilns, wideawake, strong young men will usually be able to find steady employment at living wages with opportunities to prepare themselves for the few important positions which are to be found in each establishment in these industries.

An intelligent young Swede who had in four years obtained an amazing amount of information about the industrial conditions in this country, gave me this bit of vocational biography: he landed in New York in

April with all his belongings in a knapsack and enough money to meet the requirements of the immigrant inspector. He bought a ticket for a dollar on the New Jersey Central Railroad, went as far as the ticket would carry him, got out of a train in the morning and walked along the road until he came to a prosperous looking farm. He applied at the house for work, agreeing to work for his board until the man could determine what wages he was worth. During the week his observant eyes told him that the best farmer of the community was neighbor to the man for whom he was working and he made a contract with this more progressive farmer for the summer. At the close of the summer, he had money to carry him to a lumber camp, where he spent the winter. In the spring while on a sight-seeing trip he was attracted by the neat stables of a stone quarry. He applied for work as a driver and within a week he became stable foreman. He continued at this work during summer, and, feeling that he had mastered the language of the country well enough, decided that he should like to make market gardening his life work. So he sought work in the fall in connection with a produce commission firm on the Brooklyn market. Here he was delivery man until spring, learning the needs of the market and the methods of disposing of goods. For his final course he obtained work with a market gardener on Long Island. By diligence he so commended himself to the neighbors that he was able to lease a small farm where he began to be his own employer in a modest way but with confidence enough in the future to prevent any small discouragement from changing his plans.

When this man was asked how much he had been helped by the employment bureaus, he replied that he

had never had time to try them. His success seems to have been due to the fact that he always had a small surplus of savings to tide him over such a period as was needed to enable him to select the kind of work that he wanted.

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CHAPTER XI

Personal and Domestic Service

The number of men who are engaged in those activities which contribute to the comfort or well-being of others has increased in a surprising way during the ten years preceding 1910. The number of stewards, housekeepers, boarding and lodging house keepers has doubled while the number of male servants, barbers, hairdressers, and manicurists has increased fifty per cent.

A few vocational records selected at random may help to explain some of these increases. An intelligent countryman, accustomed to help in his own home with all kinds of housework, upon seeking his fortune in a large city, found that he could not make his living in such occupations as were open to him. With no alternative he accepted a position as a handy man on a boat chartered by a few professional men for a summer cruise. One of these was a dentist, who was so well pleased with the adaptability and willingness of the young man that he offered him a steady job as caretaker of his offices. When after a year his employer and a few others organized a bachelor's club, the management was entrusted to the young man, who handled it so successfully that it became a permanent affair.

A colored man who is holding a remunerative position as the manager of a coöperating lunch room received his initial training as a porter on a Pullman car. The chief steward of a summer hotel attracted the attention of the manager by the satisfactory service that

he was rendering as a waiter in a restaurant; in this position he was supporting himself while he was acquiring the language of a strange city. The present manager of a city hotel with hundreds of guests obtained his first experiences as the manager of a college boarding club.

Because of the opportunities to become acquainted with the needs and tastes of large numbers of persons, service of this kind may open the way to any one of a large number of profitable openings. An Italian boy who from necessity accepted a position as bellboy in the hotel at the usual $5 a week and board for long hours, saved enough of his money to enable him to serve as an apprentice to a house decorator. After he started into business for himself he attributed much of his success in getting and holding his best trade to his hotel experience.

The tendency of city families towards hotel life, the growth in the number of public institutions, the increase in the floating elements of both our industrial and business population will continue to make an increasing demand for experienced men who can assist in the management or assume charge of clubs, hotels, and summer and winter resorts; to act as stewards of steamboats and public institutions and oversee the houses of the wealthy.

Young men who are suddenly thrown upon their own resources, those who are compelled to readjust themselves when they are not in a position to serve at apprentice wages, boys of foreign families who have difficulty in getting satisfactory openings in business houses, and those who are compelled to support themselves in strange cities will find openings in these lines, in which

they can support themselves at the outset and in addition effect small savings.

On boats and in restaurants and hotels of New York the bellboys, messboys and waiters earn from $6 to $10 in addition to their board; third hands in the kitchens, butchers' and bakers' helpers earn about the same; while the experienced cooks and bakers are usually paid about twice as much. Head waiters are frequently paid from $100 to $125 per month with maintenance.

According to the reports of the unions, the average earnings of these houseworkers for 1912 was about equal to those in semi-skilled factory work, while the prospects are better for the intelligent worker. The assistant to a first-class cook has chances for developing into a chef with avenues to profitable employment open to him; the assistant to a baker on a boat will get a more varied training than he would get in large bakeries in which the work is much subdivided. There are possibilities for saving enough in a few years of service of this kind to enable a man to enter business for himself, either as baker, butcher, or as proprietor of a delicatessen store.

The hours are long in work of this kind and the associations at the outset are chiefly with those who compose the drifting classes.

Large numbers of attendants are required at summer resorts and on excursion boats and on lake steamers. College and high school students who are compelled to earn something towards their own support during their vacations will be most likely to find employment here. Usually help is engaged early in the spring. A group of students by coöperation may circularize such employers or have one of them make a canvass at no great expense. Such circulars will receive more attention if

sent out over the signature of some responsible officer of the school. Such an officer will also be better able to eliminate replies from irresponsible concerns. Temporary service is usually paid from $6 to $10 per week with board.

There are no well-organized schools that prepare men for any of these lines of domestic and personal service, except for barbers there are private establishments offering short courses and requiring the payment of fees for instruction. Barbers are employed at hotels receiving from $8 to $10 a week and maintenance or in shops paying about twice as much without maintenance. The hours are long but the work is not continuous throughout the day. Many shops employ extra hands during the rush hours of the day. Many Italians who must earn their support while attending special schools do work of this kind.

It should be noted that of the men who are engaged in this kind of work who are of our native-born white stock, nearly all are classed as barbers, hotel and boarding-house keepers and owners or managers of restaurants, and that among the serving classes there is a preponderance of foreign-born whites and colored people, and Japanese and Chinese.

CHAPTER XII

Guardians of Life and Property

Two hundred and two thousand persons, or one out of every one hundred and fifty males engaged in gainful occupations in the United States in 1910 were enrolled either in the navy or the army, serving in the life-saving service along our seacoast, tending a lighthouse, drawing pay as members of the uniformed police force or holding themselves ready to sacrifice their lives as firemen, or acting as detectives, constables, probation or truant officers.

All of these lines of service demand full grown, able-bodied men of good repute, possessing the elements of an ordinary common school education. For most of these lines it is necessary that the applicant for admission should be a citizen of the country.

The pay is somewhat better than the pay of the laboring man and the opportunities for promotion are many, but the competition is severe. Positions are secured during good behavior, and for properly qualified persons admission to the service is not difficult.

Those who have been compelled to leave school at an early age and to enter upon some work which did not permit them to acquire such skill or experience as would secure for them later a satisfactory wage may well consider what these vocations have to offer them.

Men between the ages of eighteen and thirty-five or those under eighteen who can secure the consent of their parents, will be accepted as recruits for the navy pro-

vided they can pass the physical and mental examinations. Their enlistment will be for a term of four years and they can reënlist, provided their record is good. Upon enlisting they will be provided with their uniforms without expense to themselves, sent to a recruiting school for preliminary drill, and after they are assigned to a ship, they will receive a training in seamanship or perhaps in one of the trades, for the battleships are in reality great fighting machines. The training during four years, whether in seamanship, as cooks, machinists, firemen, carpenters, electricians, musicians, clerks, or stenographers, will be of value to them after their terms of enlistment expire. More valuable than all this will be the training which they receive in strict obedience to orders, in regular habits and the invaluable intellectual training which comes from the extensive travels and the association with men representing all classes. The navy is a great school, but at the beginning it is a hard school for those who have been accustomed to follow their own inclinations. In addition to their training the young men will receive their board and clothes, be provided with the best of medical attention, have instruction in the ordinary school subjects, enjoy library facilities, be under the direction of officers who will encourage all kinds of athletic sports, and receive $17.60 a month for the first year. During all this time they will have opportunity to prepare themselves for appointments which pay more. Every encouragement is given to the enlisted men to save their earnings, so that during the four years the recruit not only gets a good training but he may be able to save a considerable sum with which to make a beginning in some profitable field; this will commend itself, as a career, especially to the

young man who finds at an early age that his home is broken up.

The army is perhaps not so attractive. The requirements for enlistment are about the same as for the navy. The first enlistment is for a term of seven years, four of which are in training with the regular army and three more years as part of the reserve, during which men can follow any work they may desire provided they hold themselves subject to the call in times of need. The pay is from $15 to $18 per month but there are opportunities to win promotion to positions paying more. That the service is agreeable is proved by the fact that fully one-third of the men reenlist at the expiration of their period of service. At the end of thirty years of service the enlisted man may retire with pay equal to 75% of the pay of the grade from which he was retired and $15.75 per month additional. In case of injury during service he may be retired on a pension at an earlier date.

Of course there are many high positions with good pay in both the army and the navy, but the competition for these positions is very keen; although they are open to those enlisted men who can pass the examinations, the better positions are usually filled by those who have been graduated from the Military Academy at West Point or the Naval Academy at Annapolis. Each congressional district is entitled to have two representatives at Annapolis and one at West Point. These are usually selected by competitive examinations in which the candidates are subjected to severe tests in English, arithmetic, algebra, geometry, history, geography, and civil government. For the Naval Academy the minimum age is 16 and for the Military Academy, 17. For both, the

candidate must submit to a physical examination and prove that he is sound and not undersized. As soon as the student is admitted to these training schools, he receives a liberal allowance for his maintenance and upon his graduation he is appointed to a position as a junior officer; after this his promotion depends partly upon himself and partly upon the man who stands ahead of him in the line of promotion, but his average pay for the fours years after graduation is $1,600 per year or more.

The Marine Corps is a separate part of the army which is assigned the duty of defending the naval stations, the Panama Canal Zone, and of serving on the vessels of the navy. When it is necessary to land soldiers at a foreign port for the protection of the lives or the property of American citizens, this duty is assigned the members of the Marine Corps. Applicants for enlisting must be 19 years of age but otherwise the requirements are about the same as for the other branches of the service. The term of enlistment is four years, the pay being the same as in corresponding grades of the regular army.

The government also maintains along the coast and in inland waters a number of vessels called revenue cutters to enforce the regulations which are made for the government of trading vessels. These revenue cutters also chart any changes in the coast lines, report obstructions to commerce, and supervise the lighthouse service. Cadets are required to pass an examination covering about the ordinary high school course of study with some additional mathematics and drawing. The pay begins at $500 per year with maintenance.

A limited number of apprentices, 14 years old and

over, are accepted by the naval department. The conditions under which they are received vary from time to time, but information in regard to any of these branches of service can be secured by writing to the Navy Department at Washington.

Every large city has its own standing army in the police force and in its fire department. Applicants for admission to this army must be twenty-one years of age, of good character, be familiar with the names of streets and methods of transportation, have some knowledge of the city government, and have sufficient education to enable them to understand printed regulations and written instructions and to make reports. They must be physically sound, neither undersized nor below normal weight.

Those who desire to enter this service can secure application blanks with directions for making their applications from the civil service commission of their own city. After these applications are filed, notice will be given of the time of holding the next examination.

After the examination, the names of the applicants are arranged on a list in the order of their standing in the examination, and appointments are made from this list as vacancies occur on the force. After the candidate begins his service, for a probationary period, he is sent to a special school for a short period of instruction in his duties before he is assigned to service.

In New York City the pay of policemen and firemen is $1,000 for the first year, increasing year by year until it reaches $1,400. Only those who have attained a higher degree of education, and have been diligent in their attention to duty can reasonably expect promotion

to the higher positions, the highest of which pays $7,500 a year. In addition to their pay, the members of these departments are entitled to pensions if disabled in the discharge of their duties and after a certain number of years of satisfactory service they may retire on half pay.

In the smaller villages there are marshals and constables and sheriffs, whose business it is to see that the laws are enforced and the orders of the courts are obeyed. In some places these are elected for a short term of years, in others they are appointed; in some places they have a regular salary, in others their pay is dependent upon a prescribed schedule of fees.

In connection with banks and large corporations there are guards and detectives. Men who have shown particular skill in their service as constables and policemen are advanced to positions of better pay in connection with the detective bureaus that are maintained by police departments, or they may be employed by private detective agencies.

In connection with the courts, men of this kind are employed as probation officers; in connection with schools they serve as truant officers. For these positions experience is of more importance than the physical condition of the applicant, and a man who may have been rejected for the police or the fire department may be able to pass the physical tests prescribed for truant or probation officers. The pay varies very greatly in different cities, usually, however, it is about equal to the pay of a good mechanic; that is, in large cities $1,000 to $1,200 per year.

The guards who are stationed along the seacoast in the lifesaving stations and the lighthouse keepers lead

lonely lives and often perform very heroic service for pay which is little above that which an ordinary laboring man receives. The positions are secure, and the holders of these appointments have ample opportunities for study. The charms of a life of this kind are revealed in "An Island Garden" by Celia Thaxter, whose father became the keeper of a lighthouse when she was a small child.

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QUESTIONS FOR DEBATE

1. That the army offers more inducements to a young man than the navy.
2. That the fire department offers a more attractive career than the police department.
3. That a young doctor acquires a more valuable experience in the army or the navy than in a city hospital.

4. That a nation with a large standing army is more likely to plunge into war than a nation whose chief dependence is on the militia.

5. That the American army has done more to advance civilization than the navy.

6. That West Point offers a more valuable training than Annapolis.

CHAPTER XIII

Transportation

In the work of transporting passengers and freight in 1910 over two and one-half millions of our wage-earners were engaged. By far the larger number were connected with steam and electric railroads; a considerable number were on coastwise and lake vessels; others were employed by express and delivery companies.

Practically all these recruits are from unskilled and untrained people, although for this kind of work the full-grown, able-bodied, physically sound, intelligent young man has the preference.

It is one of the best lines for the unskilled worker who must make his own support from the very beginning, because the higher grades in this service are filled by promotion from the lower, the work is fairly steady and the protective organizations are well managed. Moreover, there are opportunities to change from one line of work to another as the worker develops aptitudes or acquires special training.

Admission is easiest to the construction gangs in which laboring men are employed at from $10 to $12 per week; here there is an opportunity to work up to foreman at from $15 to $25, and inspector or trackman at about laborer's wages, but with steadier work.

A steady man with good recommendations can readily secure a position as a substitute in the street car service. As soon as he receives a regular run his pay may be as high as $20 per week of 70 hours, but with few

chances for promotion, except as inspector at a small increase in pay.

In the great railroad systems, the young man with a good English education can find employment in the freight offices where few receive more than $15 per week; or he can begin as a yardman or engine wiper, at laboring men's wages, and when a vacancy occurs be advanced to a position as brakeman, later a fireman, and if he has some capacity for management become a conductor, or if he shows mechanical aptitudes, a locomotive engineer. His promotion will be surer if he takes correspondence courses, many of which are offered relating to this work. Some railroads have training schools for their own men and their merit ratings are determined partly by what the men accomplish in these schools.

The yardmen and the clerks may also qualify for positions as telegraph operators, or as signalmen; and the clerks can prepare themselves to serve as depot men and agents. As agents they will likely be assigned first to some small station where opportunity is given to demonstrate their capacities.

On account of the heretofore free avenue to promotion the transportation companies of this country can point to an unusually long list of distinguished men who rose from the humblest positions. Sidney Dillon, who as a high official drove a silver spike which fastened down the last rail on the Union Pacific Railroad, began as an errand boy to a construction gang; William C. Brown, formerly president of the New York Central, began as a section hand at the age of sixteen, served successively as telegraph operator, train dispatcher, chief dispatcher, assistant superintendent, superinten-

dent, general manager, and retired as president at the age of sixty. James A. McCrea, general manager of the Long Island Railroad, after graduating from college at the age of 20, entered the woods with a gang of railroad pioneers, to duplicate the career of his father, who from a similar beginning became head of the Pennsylvania system.

All the railroads have their repair shops. In these laboring men without any special training are employed as helpers; and apprentices can secure a systematic training for the skilled trades. All classes of mechanics are employed and there is opportunity to learn carpentry, upholstering, blacksmithing, painting, tinsmithing, steam engineering, and the machinist's trades. The New York Central and the Lackawanna railroads have regular apprentice schools.

The work in the executive offices requires commercial training, but the applicant for a position in the auditor's office who served in a freight office while he was getting his training in accountancy in the evening schools, will, of course, be preferred; likewise, a bookkeeper in the maintenance of way department will be better for some experience on repair or construction work, and the young man who while serving in a freight or a passenger office takes an evening course in a law school will be specially well qualified to enter the legal department.

Inexpensive short courses approved by several railroad officials are given at Elmira, New York, in the Railway Commercial School which trains telegraphers, traffic men, clerks, and stationmen.

Large corporations are beginning to employ a traffic manager to attend to their shipments. Chambers of commerce and trade associations sometimes combine to

maintain an officer to attend to all disputes regarding freight rates between them and the carriers. Experience in a railroad freight office, together with the special correspondence courses in traffic management, will qualify young men for this promising field where the salaries are equal to the incomes of the average professional men.

On account of the specialization of work in the lower grades of all branches of the service, the enforced economies resulting from the more stringent government supervisions of railroads, and the increased complexities of the large systems, the chances of the partially educated to rise to the highest places are not so good, while the chances of the graduate in engineering, accountancy or business administration, who is willing to work through the lower grades of the service, are correspondingly better for rapid promotions than heretofore.

The development of electrical science has enormously increased the number of workers in light and power stations. In addition to the mechanics who are employed in the maintenance of the plants of these power companies, the gas companies and water supply concerns, a small number of special workers are employed in each class of establishment. The head men require technical training with a few years of experience. In power stations the firemen earn from $15 to $20 per week and the stationary engineer 25% more; the superintendent usually makes wages equal to those of other high-grade technical men—the conditions vary little in the supply stations of gas and water companies. In most of these the beginner will probably be assigned to night duty.

The employes on the ocean steamships are generally

foreigners who accept lower wages than our Americans. On vessels engaged in the lake and coast trade and on our inland rivers the greater number of the hands are laboring men. Employment in the northern sections of the country is only for the summer, when the streams are open to navigation. Because of the scarcity of labor at this time, the lake carrying trade offers opportunity for vacation work to college students. Factory workers feeling the need of a change may also well consider the possibilities which this service offers. The Lake Carriers' Association maintains offices at Buffalo and Cleveland, from which information may be secured.

To be eligible to the more important positions on a steamboat, a license must be secured from the Steamboat Inspection Service. This department of the government has offices at the custom houses of our principal ports. It is difficult to obtain any of these licenses without some experience on board a vessel.

Pilots for vessels of more than ten tons burden must have had three years' experience; engineers must have had three years of experience in the engine room of a boat or one year if the applicant has had experience in handling a steam engine or if he is a graduate of a recognized technical school; the mates must have served in some capacity for two years on the deck of a vessel; masters must have three years of experience in some subordinate capacity. In addition all these must pass examinations based upon the prescribed rules, regulations and customs which are followed in those waters where they expect to go into service.

New York state supports a Nautical School in which a limited number of young men may receive a practical preparation for seamanship free. Information in re-

gard to this school may be obtained from the State Board of Regents at Albany.

The chances in the express service are not so good. In our cities the wages are from $10 to $18 for drivers and helpers on wagons and trucks, the hours are long and the opportunities for promotion limited.

Since the establishment of the parcels post the number of employes in the post offices of the country has been greatly increased. These employes are letter carriers, post office clerks, railway mail clerks, all of which are selected by examination. From these classes of employes the inspectors and chiefs of the several departments are selected. The wages paid by the government to beginners are higher than those paid by the railroads and competition for these places is keener, so that a period of waiting after the candidate secures a place on the list by passing his examination is not unusual. The examinations comprise the ordinary common school subjects, requiring especially neatness in writing, accuracy in computation, and a thorough knowledge of geography. It is not easy for those who have not completed the elementary school to pass the examination, and those who have been out of school for some years and have forgotten how to study will find the necessary preparation difficult. Instead of paying money to some of the much advertised schools making a specialty of preparing for these examinations, it would be better for the candidate to arrange to be coached by some one in the branch to which he aspires.

The post office clerks and mail carriers in our large cities begin at $800 a year, and as they demonstrate their efficiency by their record and by passing more difficult examinations, they are advanced from grade to

grade up to $1,200 a year; the superintendent of carriers receives $1,400. For admission to the railway mail service the examination is more severe. The applicant must be over 18 and under 35 years of age, physically sound, 5 feet 5 inches high, with a special knowledge of geography and the location of railroads and steamboat lines. The entrance salary is $900, increasing to $1,500 per year. At first the man serves at some railroad terminal where he sorts out the mail as it is delivered to him from the train and assists in distributing it to the wagons which carry it to the different stations in the city. When he is assigned to service on a railroad train on which he receives the mail pouches from the stations along the route and reassorts the mail for delivery to other stations, he may be assigned to night duty, in which case he has free periods of several days between periods of service.

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PRACTICAL EXERCISES

1. Assuming that the New Jersey reports are correct and that a man begins to work at 18, serves 3 years as a trackman, 4 as a brakeman, 8 as a fireman, and thereafter works as an engineer until he retires at the age of 60, if he loses 10 per cent. of his wages on account of unemployment and sickness, find his total net earnings, supposing that his support costs him $600 per year.

2. Assuming that a railroad agent at a small station earns the average pay of agents, and that on becoming 25 years old he is convinced that he has no prospects of advancing himself as an agent and decides to learn telegraphy; assuming that his expenses and loss of wages while he is taking the course amount to $900 and that he secures a position as telegrapher and serves as such 4 years, receiving the average wages, and then secures an appointment in a commercial office in which he makes the average wages of that class until he retires at 60; compute his gain by making a change.

3. Assuming that a railroad clerk had attained the average as given in the New Jersey table at 25, and being convinced that he had no satisfactory prospects, he prepares himself for the railway mail examination, secures an appointment when he is 28 at the minimum salary and has an annual increase of $100 until he reaches the maximum at which he serves until he retires at 55, compute his total gain by the change.

WAGE INFORMATION

The Bureau of Labor Statistics of New Jersey requires the railroads operating within that state to report annually the number of employes, their classification and earnings. The following tables are computed from the report of 1912; slightly higher schedules have gone into effect since:

Number.	Class.	Av. earnings.
1,831	Engineers	$1,536.55
1,382	Conductors	1,354.65
1,202	Yardmen	959.65
1,937	Firemen	958.50
2,935	Brakemen	857.34
7,107	Trackmen, etc.	496.27
824	Agents and assistants	846.57
937	Telegraph operators	802.27
1,575	Clerks	764.41
4,652	Mechanics and Helpers	792.61

The Department of Labor of New York reports in its annual statistics the earnings for these classes as reported by the members of labor organizations through their officers. These figures do not include all of the workers. Based upon the returns for the first quarter of 1912, the earnings of certain classes show the following averages for the year:

STEAM RAILROADS

Engineers	$1,672.84	Motormen and guards on electric trains	$1,271.32
Conductors	1,401.24	Clerks	765.84
Switchmen	1,286.56	Telegraph operators	775.80
Train and yardmen	1,036.12	Mechanics	746.00
Baggagemen	715.16		
Trackmen	649.40		

OTHER CLASSES

St. railway employees	$845.68	Boatmen	$610.76
Masters and pilots	1,409.56	Seamen	787.04
Engineers, marine	1,308.68	Commercial telegraph operators	1,123.60
Firemen, marine	699.16		

From the report of the Department of Docks and Ferries of New York City the average salaries appear as follows:

Marine engineers	$1,587.22	Pilots	$1,800.00
Stokers	1,080.00	Quartermasters	1,200.00
Water tenders	1,080.00	Mates	900.00
Captains	1,908.00		

CHAPTER XIV

Factory Work

It has been pointed out that fully one-fourth of all the male workers in a city like New York are doing some one of the many kinds of easily learned manual labor at wages which yield them little more than a living. This work requires full grown men and those who read this, if they are worth anything at all, by the time they are old enough to be useful in manual labor will have found some more promising work. It is not so easy, however, for them to escape the low-skilled grades of factory work in which fully one-fifth of our male working population is employed.

The demand for higher wages on the part of skilled workmen has led manufacturers to cheapen the cost by introducing machines to do many things which were formerly done by skilled men. Many of the lighter machines are as easily operated by boys as by men; and since boys are willing to work for lower wages, and since the boys who are just from school are energetic, they are frequently more profitable to the employer than such men as are compelled to accept this kind of work. The legal restrictions against employing boys under fourteen and the inconveniences which arise from employing boys between fourteen and sixteen for the working day that is shorter than the regular day, have made an excessive demand for boys who have reached the age of sixteen. This excessive demand has had a tendency to make the beginning wage for boys in factory work

higher than in the more promising lines of work in which the inexperienced boy is not so profitable to the employer. Whether driven by necessity or by his unrest, it is easy for him to find something to do.

Go with him into the manufacturing districts and find what is offered him. In the first building which has its cards of invitation hanging in the window you find that without asking any questions they are willing to engage your boy. They take him into the shop and ask him to attend an automatic machine or a series of machines which make bolts or small nuts for bolts. The work of the boy is to note the regular operation of the machine, to stop it by pulling a lever, if anything interrupts the machinery, to call the attention of the foreman to it, and to carry away the trays as they become filled with finished parts. The pay is $8 after the second week; the smooth running machine has a fascination for your boy, the pay seems attractive to him and he wants to go to work. You note the long rows of boys in the shops, the few men who are employed in work which requires intelligence and you lead your boy away. The next offer is to watch a machine which spins copper wire and winds it on spools. The shop is better lighted than the first, the seemingly good pay and the thought of the needs of the family incline the boy to accept the work, but you dissent and go farther. You climb a stairway to a small room in a loft. It is a gold-beater's shop. He can use a boy. Small strips of metal are to be laid between strips of leather and beaten out until the gold foil becomes very thin as used by bookbinders and painters. Oh, yes, with a little practice the boy might soon earn $9 per week. Again you restrain the boy's eagerness to make easy money. In suc-

cessive blocks chances may be found for pasting labels on cans of paint, cutting cakes of soap out of bars, slipping blotters between freshly printed sheets as they are delivered from the press, and a hundred other similar kinds of work are offered every day of any fairly prosperous season.

There is nothing to be said against any kind of honest work, provided it gives a man his livelihood and does not prove to be his undoing. Hundreds of young men enter grades of low-skilled work, and hope that by attending evening classes they may prepare themselves for something really promising, but the daily routine of the shop, and the wear and tear of the trip to and from the shop so weary them that their good resolutions are soon forgotten and it is little wonder that less than one-third of them are able to carry out their plans for their development.

There are, however, those for whom no blind alley can become a prison. Some have the strength and ingenuity to climb any wall which looms up at the end of the alley. One young man began as a burnisher of brass fittings; he soon had his observant eyes opened to the fact that the most important man in the large factory was the mechanical engineer; by inquiry, he also learned how mechanical engineers are made. In due time, he escaped from the chrysalis of youth into the manhood of a mechanical engineer.

Another young man argued with himself that in any kind of work in which the great mass of the workers had little ambition and no breadth of general intelligence, there was less competition for the few important positions which are found in all specialized work. He stuck to it, learned factory management by studious

reading and attendance upon lecture courses and finally became a specialist in the managament of knitting mills.

Still another who began as an operator of a machine at which during the course of a working day he was supposed to stamp out of sheets of metal 4,200 tops for tin cans, dreamed a dream in which he discovered himself the successor to the grouchy and much-hated foreman of the factory. If half of what social workers say is true, there are thousands of factories in which the present deteriorating conditions under which work is done could be remedied. The call of the times is for men with sufficient experience in particular processes, coupled with sound and well-matured judgment, to take the places which must soon be vacated by the managers born of other and different times. These new men will be more successful if they come out from among the workers in those industries which they are to regenerate.

It is useless for a worker who drifts into unpromising occupations to add to his unhappiness by blaming industrial managers. In every community there are those who are willing to accept easily learned work for a bare living wage; but those who expect more must qualify for something that is worth while. By strenuous efforts they can do this while they are supporting themselves by doing specialized factory work; if, however, they can choose it is well to get into an industry in which the larger numbers of the workers earn a profitable wage. I note that in 1912 in the entire state of New Jersey, 14% of the male workers in candy factories were earning as much as, or more than, $15 per week; while in the making of wood and paper boxes, 16% of the male workers over 16 years old were earning

$15 a week and more; in the making of brooms and brushes, 20%; in carriage and wagon factories, 50%. A table is given showing how estimates can be made of the prospects in different industries.

This table is worth studying. It shows that in the making of cornices and skylights a man has 75 chances out of a hundred of earning more than a laboring man

Selected Industries	Percentage of the whole number of males 16 years earning $12 or more per week.	Percentage of whole number of males earning $15 or more per week.	Percentage earning $25 or more per week.
Agricultural machinery	40	21	1
Artisans' tools	53	31	4
Art tile	40	20	2
Boilers and tanks	63	40	4
Brick and terra cotta	30	13	1
Buttons, metal	60	46	4
Buttons, pearl	45	24	12
Carpets and rugs	36	20	2
Chemical products	48	26	2
Clothing	48	31	4
Cornices and skylights	75	61	22
Corsets	52	40	5
Cutlery	56	31	2
Cotton goods	23	13	1
Wire and wire cloths	47	24	3
Electrical apparatus	58	39	3
Embroideries	69	62	39

and 22 chances of earning twice as much; while in the making of brick there are only 30 out of a hundred of wage-earners who make more than the average laboring man and only 13 out of a hundred who attain to $15 a week in New Jersey.

In other localities the rates of wages are different but the ratio of those earning a profitable wage to the whole number of workers is about the same and has about the same relation to the wages which the workingman can earn in the particular localities. This is

well illustrated by this chart of the hourly rates of wages paid in the cigar factories of different cities as given in Bulletin 135 of the Department of Labor and Commerce. Here you will note that in Baltimore about 50% of all the workers receive over 20 cents per hour, or $11 per week, while in New York 50% receive over

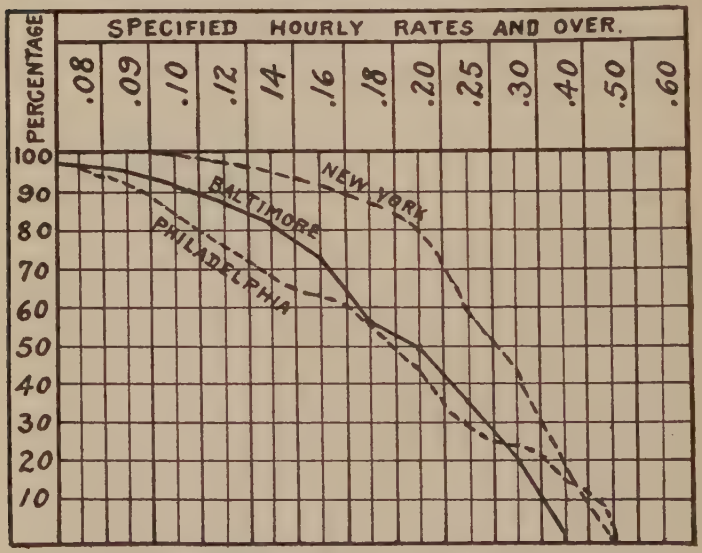

CHART SHOWING PERCENTAGE OF ALL WORKERS IN CIGAR FACTORIES RECEIVING SPECIFIED HOURLY RATES OF PAY.

30 cents per hour, or $16.50 per week. This difference is somewhat greater than the difference of the wages of the casual laborer in the two cities, probably because in Baltimore the larger number of factories make a cheaper grade of goods.

This tendency to cheapen labor through the introduction of machinery has probably not reached its full

limits. Many kinds of work which until recently have been carried on by skilled men are now being done in factories. Just a short time ago most of the baking was done in small neighborhood shops. A workman began as a helper at about the wages of a manual laborer, worked successively as a third hand, second hand, and baker, so that in the course of two or three years he would be making from $18 to $22 a week, and instead of doing one thing all the time in the small shop he would be changing about from the harder to the less difficult work during the day.

These small shops still exist and although it is possible for a young man to learn the whole of the trade in one of these small shops in three years and with an investment of $1,200 to $1,500 start a shop of his own, the construction of many enormous plants in our cities during recent years indicates that this work is being done more and more in these large plants, in which the best paid factory hand is the foreman at from $20 to $30 per week. An oven tender works in heat all day long but rarely makes over $1,000 a year; a mixer makes even less; and the rest are helpers who are doing all day long the one same kind of work, which is easily learned. The mixing is done by huge machines; the dough is cut into loaves of the right size by other machines from which the conveyors carry on endless belts the lumps of dough through the ovens, and return them to the wrapping room where the tissue paper covers receive them when they are ready for the shipper.

The same process has gone on in the making of boots and shoes. Twenty-five years ago the customer went to the shoemaker, had his measure taken and his shoes made by one man who was a highly skilled man work-

ing at a trade which he learned by serving a four years' apprenticeship; after that he served as an assistant in a shop and then opened a shop of his own. His customers were his clients; he took pride in his product which was both a superior and durable article. Although his day was long, his work was less irksome because he changed from one kind of work to another during the day.

This has been changed and the modern shoe factory has so divided the work that in the making of shoes there are over one hundred and fifty processes and in the factories in which they are made there are few men who can make a shoe. In these factories 50% of the male workers earn less than the wages of an able-bodied laborer, while perhaps 2% of the men in the shop earn as much as $25 per week.

The managers of factories must have more experience than can be obtained in any one department, and because the shops themselves do not produce such men of all-around experience there has been a demand for the establishment of schools for training them. Many young people are urged to enter upon courses in such schools to learn the whole of skilled trades. Before starting upon a course of training in such schools a young man will do well to study the tendencies in those trades which are commended to him and to make sure that the specialization has not been carried so far that promising prospects have been well-nigh eliminated.

Here again it is more than likely that the really valuable man is the man who has been trained to handle men and knows how large industries are organized and managed, rather than how the processes are carried on. The best preparation for this kind of work is a good gen-

eral education, such training in leadership as one gets in the athletic field, and such a knowledge of the interrelation of productive processes as one gets by taking a course in cost accounting, bookkeeping, and trade economies.

A young high school student who had worked his way through a civil engineering course in the university found that on account of circumstances in his family he could not embark on a profession which demanded a roving existence. He therefore accepted a position as an assistant to the manager of a large factory producing enameled ware. His training in mathematics, particularly in the use of formulas, and his ability to reduce all sorts of related operations to concise diagrams, made him a valuable man to this establishment and profitable to himself.

CHAPTER XV

Laundries and Chemical Industries

The tendency towards centering productive work in large factories has compelled a more scientific study of the methods of production and the possibilities of applying new discoveries of science to operations which have heretofore been done by traditional methods. This suggests new fields for wideawake young men with a thorough scientific education. A brief study of the development of the power laundries will suggest some very promising opportunities.

The modern steam laundry had its beginning in 1870. In 1909 125,000 people in the United States were dependent upon them for their livelihood, and in that year the public paid $104,000,000 for having their work done in these establishments. When one considers that in the same year over a half million of people were still engaged in doing laundry work by the old methods, one can readily see the possibilities for an enormous extension of these power plants.

In a well-organized laundry there is a receiving department to which the drivers who collect the work from the customers deliver their bundles. The work is marked, assorted and listed in such a way that mistakes in delivering the customer's own goods may be avoided. The assorted goods are then sent to the several departments in which the different kinds of work are handled. Here the work is placed in huge revolving cylinders filled with warm water which has been mixed

with the proper soaps and washing compounds. After being subjected to mechanical action until all the dirt and grease have been dissolved, the goods are rinsed in waters of successively decreasing temperatures, afterwards placed into rapidly revolving open machines for the purpose of driving off moisture, and further dried in steam-heated apartments. The starching and ironing processes follow, then the resorting of the finished work and the preparation of the bundles for drivers to deliver to the customers.

The mixing of the washing compounds, the making and testing of the washing solutions, the bluing, and starching solutions, involve a knowledge of chemistry; the regulation of the speed of the washing machines and of the extractors, and the changes in temperatures so as to minimize the deleterious effects upon the animal and vegetable fibres of goods, involve the application of principles of physics; the methods of routing the goods through the processes and of insuring their correct delivery require a knowledge of factory management; while the proper handling and the care of the human factors of the establishments require no small knowledge of sanitation, hygiene and psychology.

The development of these power plants has been so rapid that it has not been easy for the managers to give attention to all these details. Since 71% of the wage earners were females whose average length of service was but a few years, the question of proper organization of the working force presented some special difficulties.

The career of a graduate of one of our universities who had specialized in industrial chemistry illustrates the possibilities in an industry which has been treated

with a good deal of severity by students of industrial conditions.

He dropped into one of our smaller cities, hoping to find some field for the use of his developed capacities near home. In his disappointment he felt that his necessities would compel him to take up anything. His attention was called to the laundry industry as a promising field. With grit and energy he accepted a challenge from a hard-headed manager who had little faith in college boys' value in the workshop, and was employed as an attendant to a washing machine. He learned the processes, studied their meaning and the scientific principles involved, and in due time took up in succession the other operations. It was not long before the manager was convinced of the possibilities of improving his output and of simplifying his processes. He placed the student in charge of his establishment. Experiments were carried on in order to standardize all operations. These experiments attracted the attention of other managers in the city, with the result that within two years the young man who had been an operator of a washing machine was the expert adviser of the laundry association of an entire city, and in position to dictate terms to a score of managers.

An experienced laundry manager expressed the opinion that if the ordinary laundry worker could be supervised in such a way that the best available scientific knowledge would be applied to his work, the wearing life of apparel would be increased fully one-third. The addition of one-third to the usefulness of the goods for the cleaning of which the laundry men in this country are paid 104 millions of dollars would aggregate an

enormous sum and it suggests a possibility of working out economies worth considering by any young man.

What is said of the laundry establishments applies with equal emphasis to the rapidly increasing number of dry cleaning establishments; and the same opportunities may be found in many of the food products and chemical products industries. The same conditions prevail and the same kind of opportunities may be found in establishments making soap, paints and varnishes, fertilizers, and in paper and pulp mills.

In most of these industries the mechanically inclined worker may learn to become an expert in the uses of the special machinery which is required to such an extent that he may commend himself to the manufacturers of such machinery for employment as a salesman, demonstrator, or for the installation of new types of their machines. Moreover, a few years of service in some one of the scientifically managed establishments of any one of these industries will furnish the right kind of experience for a profitable career in one of the many concerns which are continually being reorganized.

CHAPTER XVI

Textiles and Clothing

This group ranks third in the general groups of industries in the United States, being exceeded only by food and other kindred products and by iron and steel and their products. If comparison is made on the basis of the number of wage earners, it is first. In 1909, 1,437,258 persons, or 21.7%, of all the wage earners in the manufacturing industries in the country were engaged in this group.

Much of the work in the textile and clothing industries requires but a short period of training on the part of those who engage in it. They therefore furnish employment for a number of low skilled laborers. The earnings are necessarily low, and the work being highly specialized the employe has but little opportunity to learn anything beyond the small part of the work that is assigned to him. There are, however, some skilled laborers required, and the wages received by them are good. A young man who is intelligent and alert may find opportunities for advancement in any of the various branches of those industries.

Under textiles are grouped cotton, carpets, knitting, silk, and woolen mills, and establishments for dyeing and finishing textiles. In carpet, cotton, silk and woolen mills many of the occupations are alike. In each are carders, picker hands, reelers, beamers, warpers, spinners, loom fixers, and weavers. In knitting mills that make their own yarn there are also carders and

spinners. In dyeing and finishing mills there are reelers and beamers of warps, but otherwise the occupations in knitting mills and dyeing and finishing places are unlike those in the other mills of the group.

The most skilled employes are the foreman, second and third hands, fancy weavers, mule spinners, warpers, slasher tenders, loom fixers, card grinders, spinning and frame fixers. Most of the other operations require but little skill, as the machinery has been so highly perfected.

In the second class are those who have acquired dexterity in tying knots or twisting ends together. These are frame spinners, plain weavers, and nearly all those who tend machines. The helpers by acquiring skill will in time find places in this class. The third class is made up of those who do manual work that requires neither skill nor experience. Some of these receive as low as $3 or $4 a week. From this the wages range up through $7, $8, $10, $12, $15, and $25 a week, and some more than this. Foremen and overseers as high as $38 or $40 a week.

In clothing factories the employes of the highest skill are superintendents, foremen, designers, sample makers, and finishers. In the second grade are pattern cutters, spongers, bushelers, hand sewers, basters, sergers, pressers, padders, and machine operators. In the third class are pasters, turners, ticket sewers, and some other workers of corresponding ability. The wages correspond with those of the textile industries.

Young people sometimes find this work the only field open to them and, because of the necessity for their earning money, they are obliged to accept positions in one of these low-paying occupations. Many of them

have succeeded in gaining promotions and finally receiving good wages. Some, too, by making the most of their opportunities for improvements, have been able to find more remunerative employment in some other industry. Young men have been able to rise to membership in the firm or to engage in manufacturing for themselves. In the clothing business there are many opportunities for individuals to go into business for themselves.

The experience and knowledge gained by a young man in working his way up through an industrial concern of this kind is the best possible training for salesmanship, providing he possesses the other qualities of a salesman.

The opportunities for learning a business are greater for an apprentice in a custom tailoring establishment than in a large factory, and the possibilities of becoming an individual proprietor are greater.

In the state of New Jersey in 1912 less than 30% of all the males in these industries were earning over $15 per week. An increase in number of female workers has had a tendency to reduce wages paid to men.

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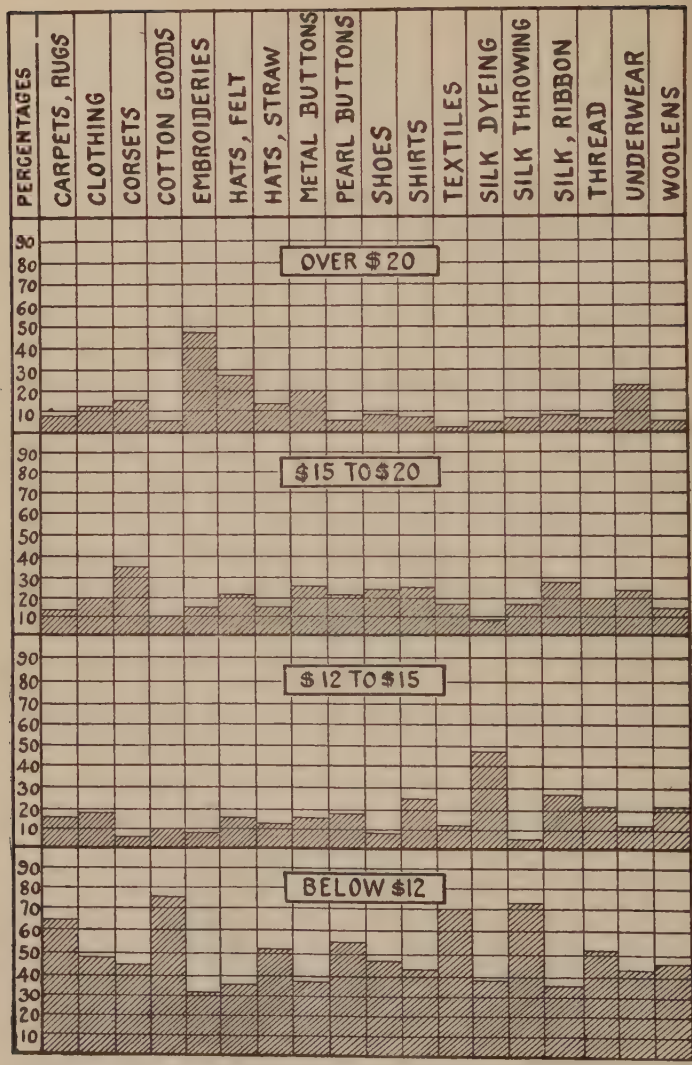


CHART SHOWING THE PERCENTAGES OF ALL MALE WORKERS OVER 16 YEARS OF AGE AVERAGING SPECIFIED WEEKLY EARNINGS IN CERTAIN TEXTILE INDUSTRIES AS REPORTED BY THE NEW JERSEY BUREAU OF LABOR STATISTICS FOR 1912.

CHAPTER XVII

The Printing Trades

Whenever possible young men who are compelled to leave school should try to secure a regular apprenticeship contract with shops employing skilled workingmen. Printing is one of the skilled trades in which such contracts may be secured by boys of sixteen years of age and for this reason the subject is considered at some length.

Printing as a trade is so varied in its nature, and so much specialized, that a youth trained in one class of work may find himself handicapped for a time on entering another office in which the business is of an altogether different kind. There are thus various classes of printers: publishers, who manufacture their own books and own a printing office; printers, whose chief business is to print books for publishers; jobbing houses, for commercial and display work; newspaper offices; manufacturing stationers, whose work is chiefly the printing of account books and to whom the printing is but a small part of their business; and plants owned by manufacturers and commercial houses in which some of their own work is done.

Since a worker can usually acquire skill in only one of the printing trades, he should carefully study the requirements and prospects in each before making a selection; and if he should be compelled to accept other work at the outset he should make an effort to get into the desired line as soon as possible.

The conditions under which the men work are generally good; but, on account of prevalence in the atmosphere of the print shop of certain impurities arising from the ink, dryers, and lyes in some departments, and perhaps some contamination from the type itself, and because much of the work requires stooping over forms, young people with weak chest development should hesitate about taking up this work.

Any boy desirous of learning this trade should be intelligent, well educated, and active, and have good eyesight. He should have satisfactorily completed his grammar school course, and should be interested in books and what is passing round him; for the more knowledge he possesses the more able is he to perform his work.

To be a quick and intelligent reader, to know how to punctuate and to have formed the habit of correct spelling are essentials.

There are many things about the printing trade that make it different from any of the other skilled trades. The associates which the apprentice finds in the shop are usually of the good type of men. While the worker's hands are busy his mind finds a variety of interest in the many kinds of jobs which are assigned to him. As a rule, there is no demand for Sunday work, except in newspaper offices.

In most of the printing trades the work is eight hours a day, although in some shops the time may be nine hours. Because printing is so closely related to so many different trades, the temporary stagnation in any one line of work does not completely cripple the business, and, although the business may have its pe-

riods of depression, it never comes entirely to a standstill.

In selecting an occupation a worker may consider the possibility of learning some business or trade in which, after having served his apprenticeship, he may start in business for himself.

Viewed from this standpoint the printing trade presents many peculiarities. It seems easy to begin a shop on a small scale without foreseeing some of the peculiar difficulties which will later confront the small business man. As one employer expressed it: "Printing as a business presents all the difficulties and irregularities of any kind of contracting work. It presents the same difficulties of handling help and working out economies in the use of raw material as any manufacturing industry, and it likewise presents the same difficulties of marketing the product and making the collections as any retail business." It was the opinion of one man of long experience that less than 40% of those who embark in business for themselves secure for their services more than that which they could earn in the way of wages.

The boy who goes to an apprentice school at the outset learns to set type, and if he continues long enough he may become a compositor. The compositors form a large proportion of the workers in the printing trade. Until a few years ago, nearly all of the type was set by hand. By the introduction of the linotype machine the setting by hand for newspaper work, except for headlines, generally became a thing of the past. Later a monotype machine was invented, and this machine, as well as the linotype machine, is used in setting up type for books. It requires a good deal of training and skill

and a habit of absolute accuracy to operate these machines successfully.

The composing room is usually a well-lighted place. The apprentice in the composing room begins at the work of cleaning up the room, washing type forms, and learning the case; and later he may be assigned to the work of distributing. In this way he learns the different cases in which the fonts of type are kept. As soon as he has learned this he may be asked to assist in setting up type. This is easily learned, but it requires long practice to acquire profitable speed, and for this and other reasons the period of apprenticeship before receiving full pay is usually five years. During the latter part of this period he may be assigned to stone work, locking up the forms; that is, arranging the pages of type which come from the compositors in an iron frame called a chase ready for the press. If he takes care during this period to perfect himself in spelling, grammar, and punctuation he may become a proofreader. The proofreader receives the first impression from the newly set up type, compares it with the manuscript from which it is set, and marks the mistakes which the compositor has made. As he examines the first printed impression he has a copyholder who reads the manuscript for him. Sometimes the copyholder is a girl and sometimes is the apprentice.

Well-trained and accurate compositors may be assigned to the operation of the typesetting machines. Sometimes a compositor while he is serving his apprenticeship takes a course of instruction in operating the typesetting machines. In most of the large cities schools are found where operating is taught. The

course continues a few months and generally a small fee is charged.

The apprentice in the composing room usually starts at from $4 to $5 per week at sixteen years of age. In places where boys have had a year or two at a printing school the pay may be higher for beginners in the shop and the time required for the apprenticeship less than five years. During the first two years he may be advanced to $7 to $9 per week. A good compositor may earn from $900 to $1,100 per year. Compositors on job work who are unusually skillful may earn as high as $1,200 per year.

The errand boy who goes into the composing room or into the office of a printing house may receive from $4 to $6 per week, and if he does not care to learn the trade, or is deficient in his elementary education, he may be used to deliver small packages of printed matter to customers. He may work into the stock and cutting room later, where the paper is kept and where the large sheets are cut on heavy machines into the correct sizes for the press room.

After the forms are arranged ready for printing they are sent to the press room. In this room there are small presses, fed usually by hand, and large cylinder presses.

The apprentice in the press room usually begins as a sort of useful boy, to wash off type forms, clean ink from the presses, wash ink rollers, and do other necessary work. The low pay for this work may seem small to the boy who compares it with the cleaner work in the offices and stores which is done by his neighbor's sons for higher pay at the beginning. This may tempt

the apprentice to quit his job unless he has some grit about him.

It will not be long before the apprentice will be able to feed cards and small jobs into the printing press and later learn to ink his press and make it ready for printing. At this stage he will receive from $7 to $10 per week. If he is of a mechanical turn of mind, he may take some evening mechanical courses at the school and thus learn to handle machinery and become a foreman in the job press room or an assistant or pressman on the cylinder presses at good pay.

The master pressman is a sort of an aristocrat among printers. He is the one who finishes the work for the eye of the public. If, with mechanical skill he has artistic taste, he becomes a real artist in this line. It will be well for the apprentice in the press room to learn something about combining color, and such a knowledge of lights and shadows as a course in freehand drawing or color design will give him.

Because the type is made of soft metal printing is not done directly from the type for large orders or for newspapers; instead, by processes not easy to describe, forms of hard metals are made. These forms are called electrotypes or stereotypes. A good strong boy with a knowledge of physics and chemistry, fond of experimenting with chemicals and electrical apparatus, will make a good apprentice for this department. His advancement and rate of pay will be about the same as in the job room.

Engraving is the general name given to the business of making the plates from which maps and pictures are printed. These are drawn on paper by draftsmen and artists. In newspapers these artists frequently

receive very high pay, the reports received from seventeen workers showing an average of $1,512 per year. Formerly all these drawings had to be engraved on blocks of wood, from which they were printed. Now most illustrations are made by the half-tone or zinc process. After the picture is drawn or photographed, as the case may be, a negative is made, and this is printed on the plate, either zinc or copper, and finished by the use of chemicals. There is a great demand for these photo-engravers and the pay is good. Reports from seventeen show average earnings of over $1,200 per year.

Some illustrations are printed from flat stones upon which they are drawn from sketches made by the artist. This process is called lithography. These tranferrers must be very careful men. The average earnings of twelve reported reached over $1,100 per year. Those who run the presses which print from these stones receive somewhat better pay than the other pressmen.

There is no regular apprenticeship system in electrotyping, stereotyping, or engraving. A boy with a high school education and a fondness for drawing, chemistry, and physics ought to do well in these rapidly expanding branches of this trade. He would go into a shop as a general utility boy at from $3 to $5 per week, and his advancement would depend upon himself. It is unfortunate that in these highly useful, interesting and difficult trades the only way that a worker can succeed is to pick up what he can without systematic instruction. For this reason a boy is not likely to get along well if he has to be told several times before he learns any new things.

In the making of account books, before printing the

sheets, it may be necessary to pass them through a curious machine on which, by an ingenious arrangement of self-inking pens, colored lines are ruled into the paper.

The ruling and printing for books is done on large sheets, which must be folded to the proper size in such a way that the pages shall be in the right order. These folded sheets are called signatures.

Sometimes engravings are to be inserted or pasted into the folded sheets. This work is usually done by girls, as is the collection of the signatures into a book and the sewing of these together. Most of the sewing is done by machines whose operations are easily learned.

The sewed sheets must have their backs rounded and strengthened and the leaves trimmed on the front and ends. This is called forwarding, the pay of an experienced worker being usually from $12 to $15 per week.

The sheets are now ready for the covers or cases, which are made by the case makers. This work is done mostly by men, although women also are engaged in making the covers or cases. This, with the finishing of the book and the stamping on of the title, is done by the experienced bookbinder.

Much of the work of bookbinding is done by machinery, but there is still a demand for finely bound, hand-made books. Many bookbinders have become artists in this sort of work, and their skill commands high wages.

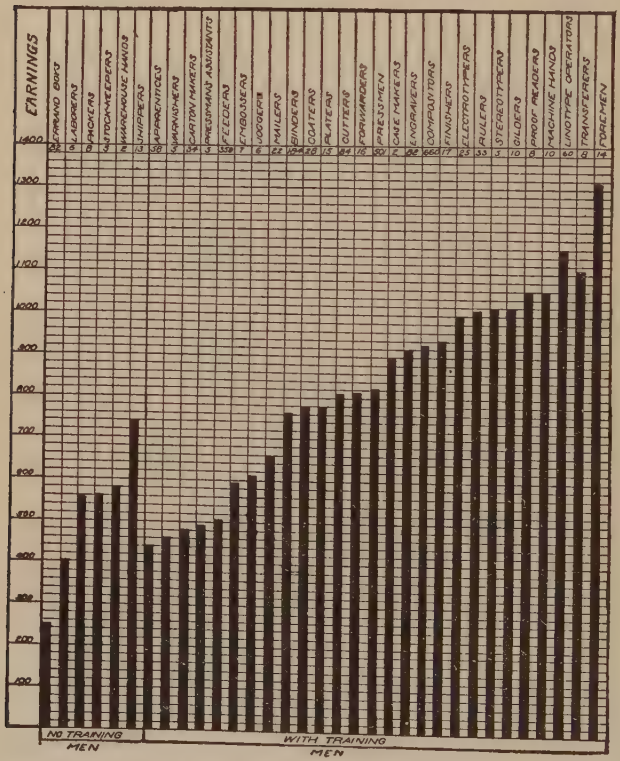
The workingmen in these trades are well organized, and the unions are sanely conducted. The wages are more uniform throughout the country than in some of the other skilled trades and the increase in the demand for workers is also so nearly uniform that a skilled man

will have little difficulty in finding work wherever he goes. In New York City in the ten years covered by the last census the male workers in these trades increased by 20,000, of whom 7,000 were skilled men. This means an increase of about 50%, while in the whole of the state of New Jersey the increase was nearly in the same ratio; in Philadelphia, 33%; and for the whole of the state of Texas about the same. The average earnings of all shop workers, male and female, was in New York City for 1909, $690; for the whole of New Jersey, where there were fewer female workers in binderies at low ages, $709; Buffalo, $627; Philadelphia, $603.

In examining figures of this kind, because the average earnings of the salaried office workers in the printing trades was in New York, $1,195; in Buffalo, $1,018; and in New Jersey, $1,143, the student will be inclined to believe that the pay of the office worker is higher; this inference would be warranted in the industries in which the pay of the skilled man was not so very much above the average worker. A fair comparison of the pay of the different classes of workers can be made by examining the diagram on page 120, showing the distribution of all the workers on the wage scale.

The young man who plunges into his work with all his heart and soul is bound to get ahead. There are always chances to work up to foreman, superintendent, or manager. This means not only that he must know his trade, but he must know many other things related directly and indirectly to his work which can only be learned by hard study. Courses of instruction should be carefully planned for himself by the young apprentice.

The first year of his apprenticeship he will do well to take an evening course in business English. Such a course may be followed in the second year by a course



DISTRIBUTION OF 3,000 WORKERS BY TRADES AND AVERAGE ANNUAL EARNINGS.

in typographical design and courses in estimating, cost accounting, and shop management.

While the young printer acquaints himself with the fullest information concerning matters related to his

trade, he will not forget that a well-balanced man must have other interests. The nature of his work is such that outdoor exercise and interest will greatly increase his efficiency. The young workman will connect himself with athletic or social organizations, and it will be well for the older printer, if he can, to spend an hour or so a day during the summer in gardening or other outdoor work.

To help the young apprentice look forward to a larger life than the life of the shop, I have recalled the history of a few young printers who made their trades the foundations of success. It is true that in a large shop only a few of the many beginners can attain to the highest positions, but the printer who works his eight or nine hours a day in the shop may find profitable uses for some of his outside time in many lines.

One young man whom I remember took his savings to make the first payment on a suburban home, securing the balance of the money from a building and loan association, agreeing to repay it in monthly installments. After he was settled he became dissatisfied with the management of the loan association, secured his own election to the board of directors, and later became secretary and manager of it. His extra pay for this was sufficient to meet his obligations on account of the loan. For many years he devoted himself to the work of the management of this loan association, helping workingmen to purchase homes on easy payments. He was not only a good printer but a very useful citizen.

A young Italian apprentice pressman who asked me to get him a position so that he might get out of a shop which seemed to offer him no prospects, took my advice, worked into the composing room, served as a

job compositor, and made himself useful to his employer by soliciting orders in his outside hours from the small tradesmen in the Italian section of the city in which he lived. The employer paid him a commission on these orders.

In this way he accumulated customers of his own. After he had mastered his trade and saved some money, with the encouragement of the manager of the large establishment in which he learned his trade, he opened a small shop of his own in the Italian section, making arrangements with his former employer to execute his large contracts and to do his machine composition. This arrangement has been kept up for several years. Meanwhile the young Italian is rapidly forging ahead as the leader of his race in that city, and before many years I expect to see him represent his section in the city council. A good printer, a loyal employe, he has become an influential citizen.

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CHAPTER XVIII

The Metal Trades

Approximately 100,000 wage earners in a large city like New York are dependent upon the metal working shops for their livelihood. In our more exclusively manufacturing cities these workers form the largest group of wage earners. Because the work requires fully matured men of a good common school education, the boys who leave the elementary schools do not usually go into these occupations, and, because of the low initial wages, the older boys who leave school are not inclined towards these shops; so that we find that these industries are recruited chiefly from the immigrant classes, more than 50% of the skilled workers in these trades in New York City being foreign born. In response to a special inquiry that was made by the Department of Labor of the State of New York in 1908, the number of persons under 18 years of age who were being trained by the employers for skilled work in these industries was less than 1% of the whole number of persons employed. The processes carried on in these shops are becoming more and more complex and require more intelligence, so that the demand for skilled men at good pay is constantly increasing and employers are giving more encouragement to apprentices and showing an inclination to make special arrangements for their training; therefore it is well for us to consider these industries at some length, because they offer spe-

cial opportunities for young men who have outgrown unpromising occupations.

In the extraction of ores and the management of mines technical experts, skilled mechanics, and office assistants of all kinds are needed, but the greater part of the work is done by laborers. With the greater perfection of machinery, however, the laborer is being displaced and the skilled man to manage the improved mechanical appliances is being more and more in demand.

The same may be said of the handling of the ore and the production of iron and steel in the blast furnaces, steel works and rolling mills. The blast furnaces are great shed-like buildings out of whose roofs cylindrical furnaces lift their tops. Nearby great derricks lift the ore out of vessels or cars, dump it into buckets fastened on endless chains, which carry it to the top where, with quantities of limestone, it is dumped into the seething furnace, into which also at regular intervals loads of coke are cast. In other buildings are powerful engines which operate the ore-handling machinery, drive giant blowers, which force into the furnace currents of air which have previously been heated in large ovens by gas from the gas-producers. The furnaces contain from five hundred to six hundred tons of a fiery mass at temperatures ranging from 500 to 5,000 degrees Fahrenheit. The impurities float on the top of this mass, and at regular intervals the molten iron which settles to the bottom is drawn off through small canals into molds previously made in the sand on the floor of the furnace shed. Here the iron is allowed to cool and harden into bars of cast-iron weighing approximately one hundred pounds each. In the modern

furnaces, which are huge automatic machines, there is little of the old-time exposure to all manner of hardships. All that the attendants do is to press a button here and push a lever there to regulate and to adjust the machinery. The demand is for technical men who can plan the machinery and supervise its operation, skilled men who can construct it and keep it in repair, and a few useful men in connection with each furnace. These helpers earn from $15 to $18 per week working alternately on day and night shifts, generally of twelve hours each. The helpers can work up to the more responsible positions if they show intelligence and acquire some technical knowledge of the processes; but, since the hours are so long as to leave little energy for this and since the furnaces are usually located away from the centers of the cities, few workmen acquire the necessary technical knowledge to fill the more important places; because of this the managers are dependent upon the technical schools.

The bars of pig-iron are carried to the steel mills and cast into cupolas managed by experienced men earning from $50 to $60 per week assisted by helpers who begin at from $16 to $18. Here it is remelted, poured into ladles mounted on wheels, and carried to huge pear-shaped vessels called converters. These converters must frequently be relined with clay, which has been prepared by the mixers and grinders. While the position of the converter is slowly changed by the levermen, hot air is blown upon the molten iron. As soon as the color of the flame indicates that the carbon has been burned out, the converter is tilted so that the other metals or alloys may be added to give to the steel the desired qualities. The steel is then poured into molds

in which it is permitted to harden, forming ingots or billets. These billets are afterwards heated and rolled into blooms, billets, or rails.

In the puddling furnace the refining of the pig-iron is carried on by a different process. It is melted after it is mixed with scrap iron. The puddlers stir this molten mass, collecting sticky masses of hot iron on the end of long rods. As it cools, after the slag is collected on the outside it is knocked off by a shingler with a hammer; or the impurities may be forced out by a squeezerman. In this process wrought or malleable iron for making tool steel is produced. These men are engaged in difficult and dangerous work and command good wages. The work goes on night and day.

Cast-iron is also refined in furnaces in which, while in a molten state, a stream of gas mixed with air is blown upon it. The gas is made from oil, coal, or natural gas. The iron must be stirred during the process. The attendants are a fireman with assistants, a charger who fills the furnaces, a gas producer who manages the gas-making machines, a tapper who opens the furnace after the iron is ready to be drawn off into molds set by the pitmen.

The fashioning of refined iron into bars for use in the machine shops, plates for the boiler makers, steel rails for car tracks, and iron beams for builders, is done in the rolling mills.

The heater, who is an experienced workman, manages the furnaces in which the ingots are brought to a red heat. It may be necessary to get just the right heat to do this in a soaking pit, the bottom of which has been covered with coke dust by a bottom maker. By the aid of guides set by the guidemen the heated iron is then

made to pass through long series of heavy iron rolls by which it is flattened out, rounded, or curved in any desired shapes. The screwmen set the rolls so that they are the proper distance apart, and the rollers with long handled iron tongs direct the course of the heated bars until, as it emerges from the last pair of rolls, the stamper presses on it the proper number and the shearer cuts it into the right lengths. Roll engineers regulate the speed of the machinery. For making hollow pipes the metal is forced through steel forms, emerging through openings of the desired size in U-shaped forms. The edges are then forced together and welded, making the iron pipe complete with a seam along the one side. Metal rods, by being forced through a succession of gradually decreasing holes, are drawn into wires.

In the iron and steel mills, rolling mills, and blast furnaces, in 1910, two-fifths of all the employes were working 72 hours and over per week; one-fifth were working 84 hours and over; nearly one-half of all the workers were laborers earning less than 18 cents per hour; one-fourth were semi-skilled workers earning between 18 and 25 cents an hour; and less than one-fourth were making 25 cents or more. According to the reports of the Department of Labor, unemployment in these industries varied from 4% of the total number of workers to 31% during the month of March of the past eight years.

For the stronger machine parts bars of iron must be shaped. This may be done by blacksmiths, assisted by helpers, who beat out the heated bars on anvils; or in forge shops where skilled forgemen turn the iron bars as the heavy steam-driven hammers beat them into

shapes. For making some forms there is placed on the anvil under the hammers a specially made form or die and on the hammer itself a corresponding punch. As these two heavy jaws come together a piece of iron or steel is shaped as easily as a boy shapes a piece of chewing gum between his teeth.

The making of dies and the proper setting of them requires skill of the highest kind. The assistant who begins as a helper in the forgeshop or the blacksmith shop, or as an apprentice to the die cutter, if he expects to earn the high wages of the expert mechanic of from $20 to $30 per week, instead of remaining a helper at from $15 to $20, should know his arithmetic thoroughly and enough of mechanical drawing to be able to read plans, and he will be the better if he knows some geometry. While serving as an apprentice he should take courses in metallurgy and, if possible, in chemistry and physics.

Apprenticeship in a forge shop or a blacksmith shop is a good preparation for structural iron work on the buildings in which, at the present day, so much of frame work is made of the heavy beams from the rolling and steel mills. The men who rivet together these beams to form the skeletons of ships, sky-scrapers, and bridges must have clear heads, steady nerves, and great physical strength, together with skill in the use of all kinds of tools. They earn from $5 to $6 per day.

For the machine parts which do not require such great strength, castings are made in the foundry. The competition for the higher places in the foundry is not as keen as in the rolling mills. The foreman must know something besides the routine of the shop; and the intelligent young American who at nineteen or

twenty has waked up to the fact that the counter jobs have little promise for him will find this a good field. Although the American boy who sees in through the open windows of an iron foundry does not perhaps look upon the work of the men engaged therein with any special longing to learn that kind of trade; and, as he watches the rough men pour out of the factory at the close of the day's work, he is not likely to be inclined some day to join their ranks; yet boys make mistakes when they judge by appearance. The foundryman is engaged in one of the most useful of callings, and out of the ranks of this trade have sprung some of the leading inventors and industrial managers of the present and former days.

When a man desires to construct a new kind of machine he sends his drawings to the pattern room of the foundry. The pattern makers in the foundry are skilled men who have learned their trade by serving as apprentices for four or five years. The apprentice in the pattern room to learn this well-paid trade cannot expect to earn very much in the way of wages while he is learning, but he will find the pattern makers intelligent men with whom it is a great advantage for a young mechanic to associate. At first he will be an errand boy about the shop; then as he learns to be careful and accurate he may be put to a turning lathe to work out wooden parts, and later he may be permitted to fashion some of them with the hand tools. The patterns are made out of wood, or out of soft metal and afterwards hardened. When the patterns have been made and approved they are stored away in fireproof vaults where they are kept until needed for use by the molders. The apprentice in the foundry may be assigned to keep

these patterns in order in the storage room and to make a careful index record of the patterns in stock, either as the property of the foundry or as the property of the customer for whom special castings are made.

The work of the molding room is divided between the core makers and the molders. The molders take the pattern and place it in a wooden box or frame called a flask, which is in two parts, then the pattern is covered over with green sand in such a way that the two parts of the flask containing the sand may be separated and the pattern removed, and the two parts placed together again in such a way that a hollow space of the form of the pattern is left within the sand. Leading to this hollow space there is an opening called the gate through which the melted metal is poured so that when it completely fills the hollow space and becomes hardened it will leave the exact form of the pattern. Now, if the desired shape is to be in the form of a hollow cylinder, there must be within the hollow space a form of the size of the opening in the cylinder, and this form is called a core. The cores which are used have many forms and shapes. The preparation of these cores requires care and skill. If a pipe is to be made, the core may be simply a long thin stick of sand. In order that this sand may retain the shape of the core it is mixed with some sticky material. The mixing of the sand and the adhesive material may be done by machinery, and in the core rooms there are likewise some very ingenious machines that prepare cores of different kinds. As the melted metal is poured into the molds containing these cores this sticky substance, being heated, forms gases, therefore in each core there must be, running through the whole of it, a small opening called a vent

by means of which these gases may escape. It requires great skill to insure the construction of the right kinds of vents for cores of different kinds. Now, a mold which is prepared for the reception of this melted metal can be used for only one casting, so, when a foundry has an order for a large quantity of iron casting for making school desks, many molds of the same kind must be made. Molding machines have been devised for making these molds. The handling of these molding machines can be readily learned, so we find that a boy who goes into the molding shop at the age of eighteen or nineteen may serve as a helper to a molder, and, as soon as he learns how sand is handled, he may be assigned to the operation of a molding machine and learn the simpler kinds of hand work within the very short period of one or two years.

While the molds are being prepared the chargers mix bars of cast iron and pieces of scrap iron and place them between layers of coal or coke in cupolas. These cupolas are tall structures built of brick and fire-clay in cylindrical forms, having suitable openings at the bottom into which blasts of air are driven by blowers to hasten the melting of the metal.

After the molds have been arranged in long rows at a given signal, when melted iron is ready in the furnace, the ladlemen with long-handled ladles arrange themselves in order, receive in turn from fifty to eighty pounds of this melted, sparkling metal, carry it to their molds and pour it into the proper openings one after another. Where heavy wheels, like the heavy parts of machinery, are to be cast, the molds are brought to proper position by strong travelling cranes and the great, heavy iron vessels are filled with molten

metal and lifted by cranes so that the metal may be poured into the heavy molds.

Many kinds of metal and alloys of different metals are handled in the same way to produce castings for various purposes.

Foundries generally confine themselves to just one kind of work, so we find that in some foundries very heavy iron castings are made; in others the more exact pieces of machinery are made out of brass; and in certain others those parts of machinery requiring unusual properties are made out of alloys of different metals. Every distinct alloy of melted metal has its own peculiar way of cooling. Some alloys cool rapidly, others slowly. Where very uniform cooling of the casting is required the mold is made of dry instead of moistened or "green" sand, as it is called. Complicated parts of machinery are cast in molds built up of clay.

The cooled castings, as they are removed from the molds of sand, are sent to the cleaning room, where they are trimmed to the proper shape. There castings which were made in series are separated. It does not require a great deal of skill to do this.

It will be seen that the work of the foundry is not as simple as it seems to the observer. In all the processes there is much to learn and as much work for the brain as for the hands; therefore a keen high school boy who knows something about chemistry and metallurgy and understands the effect of heat upon metals will find this an interesting occupation.

The work is of such a nature that it can be learned only in the shops through experience. In all the shops there are well-paid foremen and managers; regular machinists in charge of construction and repair of the

machines needed in the several departments; a few draftsmen; one or more expert chemist with assistants; and the usual force of office assistants.

In brass foundries some alloys, when mixed with compounds of mercury, cause vapors to arise which are injurious to health; the injurious effects, however, can be warded off by wearing respirators over the nose during the operations. There is danger also from the handling of molten metal by careless workmen and from the rapid changes in the temperature of the shops where at the time of casting the air becomes unduly heated.

Beginners, laborers, and helpers make from $10 to $15 per week; molders and coremakers from $3 to $5 per day; and skilled patternmakers slightly more.

In a manufacturing city about one-fourth of the metal workers are machinists who construct everything from the most delicate scientific instrument to an equipment for a battleship.

Machine shops are of two general types: the shops which are maintained by manufacturers for building machines for their own use or for keeping those of others in repair; and the shops in which large numbers of machines of the same kind are manufactured. In the second class of shops the workmen may be employed day after day in performing the same operation.

When a new machine is to be made the details of the drawings are sent to the forge shop or the foundries with directions for making the parts. These parts need to be turned to exact dimensions on a lathe, or smoothed by filing, grinding, or polishing, and bolts and rivets must be made to fasten them together.

The most interesting place in the machine shop is the department in which the finished parts are assem-

bled and the machines set up, tried, adjusted and tested. The men in these departments are the best paid of the machinists.

For shaping and planing machine parts special tools are needed. Much skill is required in making these machine tools. The right metal must be selected, it must be tempered and hardened in such a way as to make a tool suited for the purpose. The expert toolmaker must know more about the nature of different metals and the effects of heat upon them than any other metal worker. He is also a highly paid man.

There are shops where hundreds of persons are employed in making household utensils from tin, galvanized iron, copper, and other metals. The patternmaker is needed to cut out the design for the sides, bottoms, and covers of these vessels; the die maker to make the punches out of soft iron, which is hardened by the temperer; the attendant to the stamping machine who uses these dies to stamp the forms according to the pattern out of sheets of metal; and other workmen who bend and twist these patterned forms into proper shapes and fasten them together to form pails and tubs in endless variety.

The finished article is pickled in vats containing sulphuric acid, after which it is cleansed, dipped in a solution of zinc or enamel or paint and then dried and baked. Most of the workers in metalware shops are doing special kinds of work which are easily learned and the pay is about what a laboring man can earn. In the lighter forms of work there are employed many boys whose best prospects will be either in shop management or outside of these shops.

In the shops making brass beds large quantities of

iron and brass rods are cut to right lengths and framed into forms and designs. The finished article is bronzed or painted or enameled.

In automobile shops and agricultural instrument shops the work is highly specialized and the workers usually spend all their time on one process. Those who are engaged in making scientific instruments are doing work which requires much precision.

The boy who enters these trades should have a good elementary school education; his chances for getting into the higher grades of work will be better if he has gone through the high school and the graduate of a technical course in college will be sure to forge ahead by way of the shop to profitable work. Of course, if a boy has never learned to observe things for himself; has not been trained to make an effort; does not know what it means to take pains with his work; and has not learned to obey orders, he is not likely to make rapid headway in a machine shop. While workmen are usually glad to answer any question, the boy must learn for himself, and if he does not do this readily he is discharged.

The apprentice who enters a machine shop of the better type, and if he has any choice he will do well to select a repair shop, serves for a year or more as a useful boy, carrying orders, sorting, cleaning, and distributing parts of machines, or acting as a helper to others. During this time he receives from $4 to $5 per week. Later he operates a jig for a few months; after that he learns to bore holes into castings on a drilling machine; then serves for a few months on lathes of different kinds. During this period his pay will be $8 or $9. After he has learned to operate a lathe he may be tempted to

accept an offer to go in to some special shop to do only this kind of work for a little better pay. This will be a mistake. It is a good deal better to remain in one shop and to learn all kinds of work in that shop. In the last year of the apprenticeship he will master, in turn, the planer, the shaper, and the milling machines, after which comes the difficult work of cutting gears on wheels.

While he is learning his trade the apprentice will keep under observation the best mechanic in the shop; will watch him and copy his methods; will note his systematic habits, the arrangements of his tools, and the satisfaction which he takes in his work. There is some advantage in serving in a small shop where the mechanics are compelled to depend upon their own resources and skill in device for doing all kinds of work rather than upon the use of special machines. If he must enter one of the large shops, opportunities must be sought to change from one kind of work to another and from one department to another. After a full apprenticeship is served he will do well to become a journeyman, serving successively for short periods of time in shops in which different kinds of work is turned out. In times of ordinary business activity the finished machinist can find work wherever he goes at wages of from $30 to $35 per week, and if, by active participation in his trade and social organizations he takes care to develop a capacity for leadership, his pay as a foreman will be larger.

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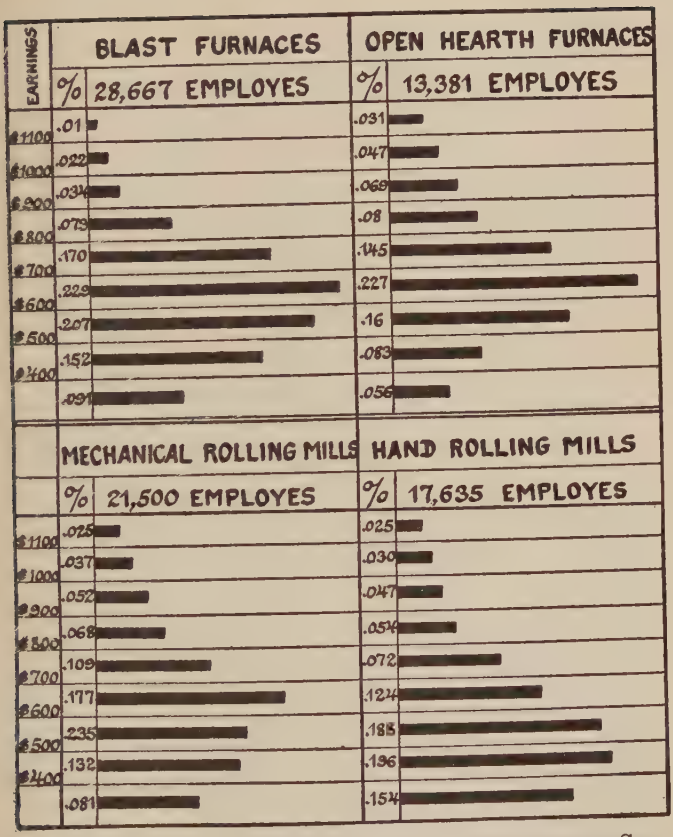

CHART SHOWING THE PERCENTAGE OF ALL EMPLOYEES IN SEVERAL BRANCHES OF THE IRON AND STEEL INDUSTRY WITH SPECIFIED ANNUAL EARNINGS.

CHAPTER XIX

The Electrical Workers

The multiplication of fascinating electrical toys, the attractive experiments of the laboratory, the stories of the phenomenal success of pioneer inventors in a new field, the former absence of any restrictions against admission into an army of workers, which in New York City alone has increased within twenty-five years to over 15,000, have been the determining factors with the unusual number of boys who express a preference for electrical work.

At the time of the earliest practical applications of electricity, men who designed and installed the machinery and those who operated it had to adapt what they could find to their special needs, and in doing this they had opportunities to develop their inventive powers. In more recent years all these things have been standardized; the accepted types need only to be duplicated and one engineer does the thinking for an entire factory or plant; consequently the workers find themselves under conditions similar to those in other shops. It is true that most of the electrical manufacturing shops are of recent construction; therefore they are comfortable and well lighted, and the work is cleaner than in the ordinary machine shop. The chances are also that it is more specialized and that the high school graduate who is eagerly welcomed in the shops making electrical apparatus will be kept on some special kind of machine

for an indefinite period unless he manages to have himself shifted about from one department to another.

According to the tables of the accident insurance companies, the production and distribution of electricity is as hazardous as work in steel and rolling mills, and where the safety of a workman depends upon the carefulness of his fellow workmen we naturally expect the associations of the workers to be strict in the requirements for admission to their craft. Careful and reliable young men are accepted as helpers to men who do the wiring for buildings, install the switchboards, and construct lines for electric light and power companies, fire alarm systems, telegraph, telephone, and signal service. They will begin and continue at the pay of ordinary laboring men unless they acquire a sufficient knowledge of mathematics, physics, and chemistry to thoroughly understand applications of electricity in the field where they are employed. If they do this, in three or four years they will command the pay of the skilled workman in other fields.

A high school graduate who entered the repair shop of an electric light company as a messenger at $8 per week was ten years later a division superintendent for the same company at $1,800, with chances to increase his earnings through a share in the bonus fund. He started with thorough knowledge of mathematics, had some equipment in the way of mechanical drawing, physics, and chemistry, and, during the first five years of his service, spent four evenings each week in the technical school. He believes that the more recently organized corporations which one finds in these fields, when not hampered by traditions, are more ready to encourage their workers to develop themselves.

A boy who had to leave the elementary school accepted a position as an office boy with a manufacturer of electrical apparatus, studied electrical theory and also studied his employer's business well. Because of this, the man took a personal interest in him and arranged that he could work successively in the several departments of the shop. After mastering the details of the shop he was given a position as a salesman and later was placed in charge of a new department.

The American people have exceeded all nations in their use of these new developments and, while at home the expansion of these industries may not continue at the same rate, the American manufacturers will likely demand large numbers of practical men to represent them in foreign fields.

WAGE INFORMATION

Of the 1,600 union workers in the electrical shops of Schenectady in 1913, 32 per cent. were receiving $12 per week; 20 per cent. from $2 to $3 per day; 47 per cent. from $3 to $4 per day and a few over $4. In the same year of the 3,000 union electrical workers on buildings in New York City, 46 per cent. reported wages of $2 per day; 6 per cent. from $3 to $4; and 48 per cent. from $4 to $4.50.

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CHAPTER XX

The Building Trades

The boy who in his childhood is more interested in building blocks than in picture books, who takes more delight in tools than in stories, and who shows more fondness for the manual training shop than for school laboratory, finds fascination in watching the long rows of houses which go up on the outskirts of his city, takes a special delight in closely observing the giant steam shovels excavating for the foundations for large buildings, and the daring workmen constructing the iron framework of the sky-scrapers, will eagerly await his time for engaging in one of the many branches of these building trades.

Will he find an opening? Judging from the records of the ten years from 1900 to 1910 he will note for the entire country an annual increase of 44,858 in the number of skilled workers in these trades and a very uniform increase in all of our cities. Considering that about 20 out of every thousand of the 1,660,094 builders may be expected to drop out annually, he will find that there is going to be room for many new recruits every year.

Owing to the organization and division of labor, the limitations placed upon the number of apprentices in the smaller shops, and the fact that the large contractors and builders have a time limit set in which they must complete their work, so that it does not pay them to

try beginners, it is not so easy to learn the trade as formerly. In the large buildings a workman is confined to one kind of work, so that there are but poor opportunities to learn all of the trade.

Most of the mechanics in these trades are members of unions, which, while they are desirous of preventing the trades from being overcrowded, are anxious to see that new members shall be properly trained. This has resulted in agreements between the employers and the unions as to the number of apprentices to be permitted in each shop, the length of the period of training, and the character of the training. On account of the nature of the work only strong boys, seventeen years old or more, are desired for apprentices.

Because of the greater variety of work which one man will be called upon to do the small shop and the builder in rural communities will furnish better training for apprentices. The large shops in the cities depend for their recruits to a great extent upon those coming from the rural communities. In the eastern cities they come mostly from the small European towns.

The progress of the apprentice will depend upon his fitness for the work, his own interest in it and the interest which his employer takes in him. His fellow workman will, for the most part, expect him to learn things for himself.

Since the apprentice system has declined schools have been established for teaching these trades. The graduates are well prepared to adapt themselves to the constantly changing conditions and, according to the records of the Williamson Trade School, as given in Chapter VI, they are doing well. A boy at 16 who is not strong enough to act as a helper may secure admission

to a trade school and attain full mechanic's wages in less time than by waiting until he can secure a place in the trade.

Older boys can readily find positions as helpers to mechanics at about laborers' pay. Such persons are needed as attendants to masons and bricklayers, to assist painters and paper hangers, and for general work about new buildings.

The annual earnings of the mechanics in the building trades are not as high as the comparatively high union scales of wages would indicate. The workmen in good times rarely have employment more than nine months in the year and the building trades quickly feel any kind of business depression. The work of the masons and bricklayers may, moreover, be interrupted by the changing weather conditions and in any contract there are frequent delays on account of the failure of others to finish their work at the appointed time, or for the want of building material. Eight hours usually constitutes a day's work in this trade.

The advances which have been made in sanitation have brought the work of the plumber into more prominence and the public is demanding that the plumber shall be more than a mechanic. To meet this demand he will be expected to be somewhat of a sanitary engineer with some knowledge of chemistry, physics, and bacteriology. The young apprentice can secure instruction in these branches in the evening technical schools. In most of the larger cities plumbers are required to present to the boards of plumbing examiners evidence of fitness for the work before being licensed to engage in it.

One successful building contractor who had been in-

terviewed stated that when as a young man he could not find anything else to do, he began as a helper on a building. His employer was so rushed that he gave him a first trial on roofing, in which he succeeded; a second on framing, and, before the season was over, he had done all kinds of carpenter work on a building except inside trimming. After his second season his family moved to a small town where he started in doing repair work and later he took small contracts. In this way he acquired the experience and enough confidence in himself to enable him to undertake the work in the city successfully and to satisfy the stringent requirements of the building inspection laws.

Another man reported that as a journeyman carpenter with his small savings he bought a somewhat antiquated and dilapidated house which he remodeled in his unemployed hours and afterwards sold to a good advantage. He repeated this process several times, having in the later operations the assistance of a younger brother. In this way they laid foundation of what grew to be a large business.

A third man in a dull season after he had learned the trade of paper hanger took the first job for a contractor who failed before the building was completed. To protect himself he had to finish the building. His experience suggested to him that he could contract for an entire building as well as for the decorating.

In every large city for the protection of the people and to insure the safety of buildings there is a department which employs experienced men to inspect the buildings which are under construction. Other departments of the city also need inspectors to supervise the construction of public works. In New York these in-

spectors begin at $1,200 per year, increasing regularly to $1,800. To be eligible to take the examination for appointment to these positions a man must have practical experience in the trade as well as the requirements to pass the technical examination.

WAGE INFORMATION

Average annual earnings of workers in the building trades as based upon the reports of members of labor unions to the New York Department of Labor for the third quarter in 1911 and the first quarter of 1912:

	Average daily wage.	Average yearly earnings.
Bluestone cutters	$4.25	$785.44
Granite cutters	4.11	1,038.62
Machine stone workers	3.85	1,008.68
Marble cutters and setters	5.08	1,045.14
Marble polishers	4.12	744.48
Sculptors and carvers	5.48	1,208.26
Stone cutters	4.46	903.30
Bricklayers and masons	5.20	954.30
Carpenters and joiners	3.95	917.04
Cement masons	4.75	904.12
Housesmiths and bridgemen	5.58	1,047.50
Lathers	4.15	891.18
Painters and decorators	3.58	791.38
Paper hangers	4.18	928.02
Plasterers	5.18	957.54
Plumbers, gas fitters	4.55	1,164.58
Sheet metal workers	4.04	1,018.36
Stair builders	5.00	1,280.00
Steam fitters	4.13	1,198.40
Steam fitters' helpers	3.00	571.90
Tile layers	4.72	1,084.02
Roofers	4.04	1,080.00

Hourly rates for union workers in a few representative cities will indicate the relative wages in different sections of the country:

	New York.	Cincinnati.	Chicago.	Denver.
Granite cutters	.50	.50	.40	.57
Bricklayers	.70	.65	.72	.75
Carpenters	.56	.50	.65	.60
Painters and decorators	.50	.45	.60	.50
Plasterers	.68	.62½	.68¾	.68¾
Plumbers	.68¾	.56¼	.68¾	.62½

As a practical exercise represent in a diagram similar to the one in the chapter on the printing trades the relative annual earnings of the different classes of workers in the building trades, using the figures in the tables given above. Make a similar diagram for these trades based on the figures for 1914 as given in the bulletins of the Department of Labor for the State of New York for that year.

CHAPTER XXI

The Woodworking Industries

The number of persons whose sole occupation is lumbering has been steadily increasing in this country. Most of the men who cut down the trees in the forests, get them out to market, and do the work in the sawmills of our northern woods are laboring men supervised by a few experts. The farm hand who cannot readily find work in the winter and the factory worker who requires a change to outdoor life can usually find work of this kind for a part of the year in the forest districts.

The lumber which comes to the cities is used chiefly by the planing mills and the builders. The work in the planing mills, in which much of the work of preparing doors, sashes and interior finishes for houses is now being done, has become very specialized machine work carried on chiefly during the building seasons. Many advances have been made in this work through the use of machinery. The work is supervised by experts, but the mill hands are semi-skilled laborers, while those who handle the lumber in the distributing yards are mostly laborers.

In establishments manufacturing furniture there is a slight decrease in the number of workers, but in piano factories there is a steady increase, chiefly of machine hands. Able-bodied young men begin as apprentices at 20 cents an hour and the experienced men usually

earn $3 per day. However, the number of highly paid wood carvers is steadily decreasing.

The finishers, varnishers, and polishers earn from $2.50 to $3.50 per day. The upholsterers show a slight increase in numbers, the usual rates being $18 to $21 per week.

Cabinet-making, which has always been considered the most attractive branch of the woodworking trades, shows a decline in the number of workers during the ten years preceding the last census. The courses in cabinet-making which are being introduced will provide an excellent preliminary training for any of the woodworking trades and the best chances for getting an all around preparation for the graduate of the cabinet-making school will be found in the shops which do repairing. The assistant in these shops will be called upon to work much with hand tools, to assist in polishing, varnishing, finishing, and upholstering.

The firms making fine furniture usually accept apprentices and pay somewhat larger wages during the apprenticeship period than in some of the other skilled trades.

The finest opportunities for the skilled mechanics with good taste will be found in the shops where furniture of exclusive design is made to fit the schemes of the best interior decorators. There are numerous shops in every city in which this is done and in which fine shop-fixtures and store furniture is made. These furnish a steady demand for the graduates of the special classes in furniture designing.

The proprietor of one of these shops began work as an apprentice in another trade, following the trade for a number of years, using his outside hours to design

and make furniture for himself and his friends in a small shop in his own home. His interest led him to take courses in design and to study art. After a time, at the urgent request of his friends, he consented to place his work on exhibition and won many prizes. Today throughout the country his modest factory has a reputation for fine work and he is crowded with commissions to undertake the designing and constructing of special furniture for clubs, hotels, and private houses.

WAGE INFORMATION

These figures are based upon tables given in Bulletin 153 of the United States Bureau of Labor, showing the full time average weekly earnings for 1913 for the entire country. Wages vary in different sections, being near the average in the Central Atlantic States, lower in the Southern states and higher in the Pacific states.

Lumber Mills

Laborers	$10.40	Setters	$15.71
Planing mill machine men	11.34	Gang sawyers	19.02
Carriage men	12.94	Circular sawyers	31.71
Edgemen	16.28	Band sawyers	33.90

Planing Mills

Laborers	$10.47	Machine tenders	$15.57
Bench workers	16.90		

Furniture Factories

Chair assemblers	$11.32	Cabinet makers	$13.30
Finishers	11.81	Upholsterers	16.42
Machine tenders	12.50	Carvers	17.41
Veneerers	12.45		

According to the reports of the labor unions of New York City for Sept., 1913, 40% of the cabinet makers were receiving over $20.00 per week, and about the same number $15 or less.

CHAPTER XXII

Some Changing Trades

Fifty years ago every hamlet had its flour mill. One of the two or three employes of each of these little mills was a skilled man who acquired a knowledge of many trades during a long period of apprenticeship. He was a hydraulic engineer or a steam engineer, somewhat of a wheelwright, machinist, and a business man, as well as a miller understanding grains and methods of producing flour with special qualities.

When the large mills arose along the great lines of traffic they absorbed these small enterprises, a few of the old-time millers became head millers and others became assistants in these larger concerns. Under their expert supervision, the most of the work is now done by intelligent laboring men. In emergencies, the mechanical engineer or the chemical engineer is called in. The management of the establishments is in the hands of expert business men.

These old-time millers are gradually being retired and younger men must be expected to take up their important work. The big mills do not offer the best chances to learn all of this important trade and there are no technical schools for training high-grade men; the wideawake young man, therefore, who is willing to enter some small establishment where he can learn all parts of the different processes and knows how to

push himself ahead will find that in the course of time he will have here a field very much to himself.

Similar changes have been worked in sugar refining, brewing and distilling. The associations controlling the brewing interests maintain a special school to which members may appoint promising workers as students for a period of special training in the technical processes of the trade. In sugar refineries, distilleries, and tanneries the superintendents are likewise technically trained men, either as chemists or as mechanical engineers, while the managers are business men who may or may not understand the productive operations of the plants. Other employes are men who have acquired practical experience in some parts of the work, or laboring men.

In harness making, which was until recently a very important trade, there has been a steady decline of skilled workers and those who remain are engaged mostly in the shops which do repair work. Most of the repair shops have regular contracts under which they receive apprentices.

There has been an increase in the number of persons who do artistic leather work. Courses are offered in many schools which prepare men for this work. The number of skilled and semi-skilled workers in factories making trunks, travelling bags and other leather articles has increased on account of the extended use of such articles. There is a chance for those who learn these trades to enter into business on their own account.

CHAPTER XXIII

Office Work

In the small business enterprises conducted by the grandfathers of our boys the patient bookkeeper in due time became the confidential adviser and, frequently, the manager of the firm. As the accountant he understood the conditions of the business; as credit man he was familiar with the affairs of the customer; his knowledge of the course of trade gave him a veto upon the intentions of the buyer; in addition, he was the advertising expert and the traffic manager. In the subdivided work of the more extensive operations of the large combinations of our day he is but one of the wheels of the business machine directed by the general manager, who is an engineer in the same sense as is the man who is planning the construction and the operations of any other kind of an undertaking. He is a business engineer of a machine which is made up of human elements. His machine must be so managed that its operations will harmonize with countless other machines.

The boy of fourteen who has a good common school education, an inclination for business, who is neat and careful in his habits, accurate and painstaking, and who can afford to dress well while he is working for small wages, will readily find openings. If he has the strength and the determination to continue his education in the evening school while he is getting his business experience, so that by the time he has outgrown boyish oc-

cupations he is ready for a man's work, he will find better prospects in the offices of corporations than in factory work. If he is indifferent to his own future office work will not bring him returns equal to the earnings of an average mechanic, and his chances for finding new employment when changes eliminate him from the corporation in which he has grown up will not be as good as those of the skilled artisan.

While he serves as messenger and office boy he will have a chance to become sufficiently acquainted with the work of the different departments to decide for which kind of work he will prepare himself. He will get some glimpses of the work of the filing department, in which training similar to that of a librarian is needed and where the pay rarely reaches over $15 per week; occasionally he will operate mailing machines and duplicating apparatus in the advertising department, where he will get some outlook into that promising field; in the promotion department he will see the work of the men who must keep in touch with changes in business conditions and in the needs and wants of people; and in straightening out the book shelves of the traffic manager he will learn what an important part the shipper of a corporation has to perform.

In all these departments he will find men who have stagnated. These will try to persuade him that there is no chance in the work for a young man, and will argue that the company makes slaves of them when in reality they are enslaved by desires which have been allowed to outstrip their capacities. If he will look more carefully he will find that in every department there are executive men who are overworked with details which they would gladly delegate to any promis-

ing man appearing on the scene. These, because of their influence and standing in the community, rank with the leaders in other professions.

He will also realize that these men will be compelled to lay down some of their work long before he can prepare himself to take up any of it, and that the future success of the great enterprises is dependent upon the possibility of training up men who can handle their affairs. It is true that the leading universities now give business courses, but it will be a long time before they can train a fraction of all those who are needed in this country, and there is very little competition for these places on the part of the immigrant classes.

The office boy who prepares himself for the accounting department still has chances of getting into the best executive positions, for the very foundation of most of the business professions is accounting.

The accountant is, of course, a bookkeeper. In his work as a bookkeeper he keeps accounts, makes out statements of the conditions of the business, and keeps informed on changes in affairs. To devise new schemes of bookkeeping he must know the theory of accounts. The accountant may be employed by a corporation to oversee the bookkeepers or he may be called in by a number of smaller business concerns to oversee the work of their bookkeepers in making out statements, directing changes in their methods of doing business, and thus become a systematizer. Perhaps he may be called upon by manufacturing concerns to determine the cost of producing the various articles which they make. In this case he acts as a cost accountant; or he may be called upon by the stockholders of a corporation to ex-

amine the books of the concern at stated times, in which case he performs the duties of an auditor.

When competition and forced increases in wages reduce the profits of a business he may be called upon to help in increasing production. As an efficiency engineer, who devises the best methods of arranging the apparatus of business and improved ways of handling and compensating workingmen.

The number of accountants increases more rapidly than the population in most of our large cities, but business schools are more numerous than the schools which train for any other vocation, so for the lower grades of work the competition for places is very keen, although the wages of the aggressive graduate of commercial school during the first five years of work will be higher than the earnings of the beginner in the skilled trades during the same period, and his work will be more steady if he uses judgment in the selection of an employer.

There are no examinations required of private concerns for positions as bookkeepers. Most of the employers are ready to accept a commercial school graduate on trial. The government supervision of corporations and the more careful supervision of state and municipal offices has brought about a demand for expert accountants in the civil service. These are required to pass regular examinations for appointment. The municipalities usually pay better salaries than the state and national government. Statements of accounts to be satisfactory to courts must be approved by competent accountants. The certified public accountants are called upon to do this. In the state of New York no one can secure a license as a public accountant unless he

can show that he has had a high school education or its equivalent, three years of experience in bookkeeping or accounting, and such a special education in the theory of accounts as will enable him to pass the very rigid examinations which are held at stated periods by a special board of examiners. Special evening courses for candidates for this license are given in the evening schools of most of the cities. When valuable time is to be given to courses of this kind it pays to enter the best schools, even though the expenses are higher.

Among those who took the last examination for a license was a young man who at 16 was compelled to go to work with only half of his high school completed. In the evening high school he continued his studies in mathematics and bookkeeping until he was able to meet the requirements for admission to the evening classes of the New York University School of Accounts winter after winter. In the meantime he was getting practical experience in all departments of a bank, beginning as a messenger at $8 per week and increasing from year to year. By the time he was 24 he had his license as a certified public accountant and a snug sum to his credit in the savings bank. With such an equipment he readily commanded a position with a firm of accountants at from $1,200 to $1,500 a year to start.

The bookkeepers begin in the service of New York City at $900. On the pay rolls of certain departments which were examined in December, 1914, out of 264 the 88 in the lower third of the salary scale average $1,296 a year after serving an average of three and one-third years, while those in the middle third averaged $1,785 after an average period of six and one-half years, and

the accountants in the upper third averaged $2,946 after serving an average of seven and one-third years.

The comparatively short average service in these protected civil service positions probably means that the experienced men can do better for themselves outside of the civil service.

There is no definite information about the prospects in the business world, nor are there any signboards which point the way to any royal road to success in this very important profession. We cannot do better than to give a very carefully prepared story of a successful public accountant's management of his own campaign.

How I Became a Public Accountant

The way that I entered the profession of public accounting was the same way that a great many other people get into their lifework—by drifting into it. Instead of drifting out again I stayed, because I found that I was adapted for the work, liked it, and had faith in its opportunities.

The experience of one man is seldom similar to the experience of another. Nor is it desirable that all should endeavor to take the same path in order to arrive at the same destination. So, while the story of personal experience is of very little service as a guide to be followed, such a story may, nevertheless, be of interest as showing how, bit by bit, the results of circumstances may be welded together into a connected and serviceable whole.

One of the hazy recollections of my public school days is of certain ruled forms and the briefest possible

instruction in their use, which was called "A Course in Bookkeeping." The school door had not closed behind me before all that was forgotten. Later it had to be relearned, step by step at a time, as necessity required.

In an early business position with a publishing house I was responsible for finding a market for a line of scientific books and I had to keep the salesbook. That brought back a very small part of my "Course in Bookkeeping."

Soon after that I was called upon to study out a better way of keeping the advertising records of a trade paper. That was my first taste of systematizing, and I liked it. Before I left that problem the advertising records were so complete and timely that we knew immediately of every dollar any advertiser spent with any one of some six or seven publications in the same field. It was great information to put in the hands of our solicitors and undoubtedly paid.

A little later, in a small business of my own that would not warrant the employment of a regular bookkeeper, I was compelled to keep the books myself, necessitating a review of all that I had once learned and unlearned of bookkeeping. That time I got a grip of the subject that never loosened. At about the same time a public accountant whom I knew showed me a few wrinkles in modern condensed accounting, which helped me no little in my own work and which also gave me an insight into the flexibility of modern bookkeeping and the opportunity for ingenuity to adapt it to the most diverse conditions.

In the very early days of the automobile industry I became purchasing agent for a large factory in that line. I found the records of the office antiquated in

form, incomplete, incorrect, inadequate, inefficient, and set out to change them. Devising a system to meet the peculiar needs I soon had the records in such shape that I could tell in about two seconds' time any article that was needed in the factory, who needed it, what it was needed for, where it was bought last and at what price, and when it was promised. If delivered, the record showed when it was received, to what part of the factory sent, the date of bill and amount. There was hardly anything about the history of that article I could not tell. The records were concise and did not take long to make, because they were made systematically.

The same company was having trouble with its cost-keeping system. The results were not being arrived at promptly, their accuracy was in question, and the detail was not sufficient. I was asked if I thought I could do anything to get better results. Cost-keeping was a new subject to me but I got all the books I could find relating to it and studied up. When I felt sure of what I was about I turned things pretty well upside down, but got the results. Just about that time a new model car was begun and finished in record time. I had a chance to follow its cost through from start to finish. The last bolt was hardly in place before the complete records were ready, showing the detailed work and cost of every part. That was a very interesting piece of work for me.

My education led me from high school to night school, and from night school to university, where I completed a course in civil and mechanical engineering and got my degree, which I have scarcely had time to look at since. Some statistician has stated that not more than

one in seven follows the profession he studies for. I am one of the other six. But an engineering education is a mighty good education, anyway, as a foundation for many other callings. I have found it so in mine.

Upon graduating from Stanford University, the first fair opening that presented itself was in Los Angeles, with a young automobile factory that was feeling its way along cautiously towards success. I expected that would be an opportunity for a young engineer, but it proved rather an opportunity for an accountant. When they found I understood accounting and cost keeping my work was cut out.

The old books were given a thorough audit, a new set was opened and a balance sheet taken off, showing the financial condition of the company. In the meantime my former experience with automobile cost keeping was drawn upon to devise a system that should be as simple as possible, yet accurate, and adapted to the individual conditions of that factory. I installed the system and stood by it until costs had been completely collected on two or three lots of cars.

Then I came east to look for an opening in the mechanical department of some larger automobile company. But as luck would have it, while looking around, I heard that one of the big audit companies wanted an assistant for a few weeks. Thinking the experience would be useful I took the place. When that temporary engagement was finished I heard of an opening with another large audit company, looked it up, and went to work on their staff. I might be there yet had it not been for an offer one of the clients made me to

take charge of the financial end of his business, with an interest in the profits in addition to the stated salary. The opportunity looked better than it proved, for the business was on its last legs. I resigned before the end came, and, with two clients promised, decided to strike out for myself.

Nearly every professional man has to expect lean years at the start while clients are accumulating. In this I was not disappointed. The first two years were decidedly rough going but business increased surely, though slowly, and I stuck it out, feeling confident of the future. I do not suppose anyone has discovered the golden way of getting business without effort. But with effort business comes from many different directions. I soon learned that the best advertisement a professional man can have is pleased clients.

This brief story of personal experience merely goes to show that nearly all of my early miscellaneous business experience has in some way contributed its share of value to my equipment as a public accountant. Every critical employer I ever had helped me to become a public accountant. Everything I ever did that called for careful thought helped me. Every piece of work I ever did thoroughly was good training for my present work. Mathematics helped me, essay writing helped me, even psychology helped me some.

So the point of my story is the emphasis I would lay on the value to a public accountant of a broad general education and a wide business experience. The requirements demanded for the C. P. A. degree, high though they be, are not alone a sufficient equipment for a successful public accountant.

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CHAPTER XXIV

Stenography and Typewriting

In the business world it is no longer necessary nor is it economical to write letters and other matter in longhand when it is possible to dictate one's thoughts to a stenographer who can take them down in shorthand and quickly transcribe them into typewritten form. Often, too, the stenographer is required to conduct a considerable part of the office routine. Not only business houses but professional people, libraries, philanthropic organizations, hospitals, courts, and city and state officers find a stenographer's services necessary.

As in all other occupations, there are many grades of work. Copyists spend most of their time in operating machines, making out bills and writing routine letters. Occasionally they take down a few letters in shorthand. Regular correspondents go through the mail, write answers to some letters and take their employer's directions for answering others. Others are confidential secretaries for the managers of the firm. There are also desks in hotel offices and other public places. These work by the hour for such patrons as may happen along. Some stenographers report court proceedings and public speeches. These command very high pay.

"It's too crowded," is the usual reply of the lazy fellow who sits on the fence to the invitations of his friends to get into the business game. It is always overcrowded just inside the gates which open the way

to tempting fields because of the large numbers who are satisfied to get just inside and are too lazy afterwards to move on. Perhaps no field is so crowded as that of the routine typewriter and the low-grade stenographer. Very few country people will be able to support themselves in the crowded cities long enough to survive the trying-out process. A business man said he could get all the stenographers he wanted for ten dollars a week. He would also surely get many he would not want at that price.

In New York City the initial weekly pay of boy stenographers to do office work is $8 to $10. The salary for those who have had experience and are capable of assisting in general office work is $25 to $30. The average salary of male stenographers in the service of New York City is over $1,600 per year. In the state civil service the average is $1,200. In the executive departments of the government at Washington the average pay for men is over $1,200 and the supply is not equal to the demand. In the executive offices of large corporations first-class men who enter as stenographers are so frequently promoted to responsible executive positions that there is always a demand for others to take their places.

The average hours for stenographers are seven to eight a day. Their employment in the majority of cases is steady. If with a business concern they expect, as a rule, two weeks vacation with pay. If employed by individuals in the professions, steadiness of employment and length of vacation are more variable. The conditions of the work are good. Light and sanitary surroundings and a good equipment are essential in doing work of a high grade.

A good memory and the power of long-continued mental concentration are necessary qualifications. No stenographer who has anything less than a good English education is very desirable. Those who have tact and skill in adapting themselves to others, can be implicitly trusted with confidential information, know how to manage their time well, and are willing to demonstrate their capacity may succeed in office positions in this line of work.

In the commercial schools the length of the stenographic course, which includes typewriting, varies from six to twelve months according to the thoroughness of instruction and the ability of the pupil. Tuition is commonly fifteen dollars a month besides the cost of books and stationery. The best commercial schools are well equipped to teach practical business methods and concentrate upon them. The boy who cannot spend the time to take a course in a high school can well prepare for business by spending one or two years in a good commercial school, if he adds to his general education by well-chosen reading.

The public high school offers a combined stenographic and business course. By means of it there is necessarily obtained a greater breadth of knowledge than in commercial schools. Such a course is three or four years in length and instruction is free. Stenography and typewriting are usually carried for five or six periods per week during two years of the course. In addition to this course such studies as bookkeeping, business practice, and also English, a foreign language, history, science, and drawing are studied.

Evening classes in stenography, both in the commercial and public schools, meet three or four evenings a

week for about five months in the year. In the commercial schools the tuition is four or five dollars a month. These classes afford the opportunity for training while one is working through the day. They afford an opportunity to attain further proficiency after the beginner has secured his initial position.

The successful stenographer must practice a great deal to attain speed and accuracy in taking dictation. Besides, much general information must be acquired in order to be proficient in handling the large variety of subjects on which the stenographer is continuously required to take notes. The stenographer who is capable of holding responsible positions must know more than the simplest English. The beginner's vocabulary must be enlarged by study and use. Think of the many different kinds of business or professional people with whom he may come in contact—publishers, dealers in automobiles, in leather, lumber or metal; department stores; banking houses; and brokers of various classes; real estate and mining companies; manufacturers of various kinds of goods, from boots and shoes to chemicals and machinery; lawyers; architects; civil engineers. Think of the different subjects with which they deal. Then it will be realized that the stenographer must be well versed in the English language. Otherwise the spoken words cannot be reported with their correct and proper meaning. Such preparation is acquired through the reading and study of English literature; practice in English composition; study of history, geography and civil government; and the intelligent use of newspapers and magazines.

The work of the office amanuensis will consist of many duties besides the writing of letters in any office

where wider opportunity for learning the business are given than those offered to the stenographer who has only the work of writing letters to do. The boy who wishes to succeed will welcome the opportunity to become proficient in any part of the office work. The records which must be kept of the business are many. Often letters must be copied. Typewritten records must be made. Multigraphs and addressing machines are extensively used in offices where the nature of the correspondence requires many letters of the same kind to be sent out. Filing devices, card systems, and records of financial standing or business integrity of the customers, assist the energetic business men. The handling of the information kept by these means will not only occupy much of the stenographer's time but will enable him to learn details of the business of essential importance to him who wishes to make himself of greater value.

Outside of the courts and newspaper offices more than eighty per cent. of the stenographers and typewriter operators are women. Even in the courts to-day women are vieing with men for these positions. The reason for this is obvious. The work is not particularly difficult after the necessary speed has been acquired. Women, rightly or wrongly, are willing to work for less pay than would be accepted by men occupying parallel positions. Business is cruel and there is no philanthropy about it. It buys what it wants at the lowest possible price consistent with reasonable efficiency. So long as the woman continues to work at a lower price than is paid to the man for a similar service the man cannot compete with the woman.

The good stenographer will find excellent openings as private secretary. This work is broader than stenography and demands a good education, good memory and general business ability. The beginner takes correspondence in shorthand; but the real secretary is able to write his chief's letters with a hint as to what to say. He is at the desk for the purpose of saving his employer's time and making his work more valuable. The details of the business are managed by the private secretary. He keeps letters and reports in order that information contained therein is quickly obtainable. A large number of people who apply for interviews with important men are sure their business cannot be attended to by the assistant. The secretary must deal tactfully with these people and satisfy them without allowing them to encroach upon his chief's time. The registrars of colleges and the secretaries of progressive business men and social workers find their work very interesting.

The efficient private secretary must possess the qualifications which make him an assistant manager, should need arise.

None but the most important speeches of the men foremost in public affairs to-day are reported in full for the newspapers. Verbatim reporting is done principally by court and legislative reporters. These are at the top of their profession. An annual salary of $2,500 a year is not unusual. Many court stenographers receive much more. They must be mentally as quick as lightning and especially well-read men. They must know a little of all the professions, at least the technical language of them. The drudgery of preparation for court or legislative work is tremendous. It

takes nerve, patience, persistence and practice, practice, practice.

Among the many stenographers who have taken advantage of their exceptional opportunities might be mentioned: President Woodrow Wilson, a very capable writer; Geo. B. Cortelyou, President of the Consolidated Gas Co. of New York, formerly private secretary of President McKinley and afterwards Postmaster-General; Geo. W. Perkins, the financier; Frank A. Vanderlip, President of the National City Bank of New York, and E. D. Easton, President of the Columbia Phonograph Co. In discussing the subject with business men, in order to get the employers' point of view in regard to the requirements for success and the best methods of working out a career, it was surprising to find how many persons in responsible business positions began their careers as stenographers. The story of one is the story of many.

"In 1886 my father suffered some losses and the old farm had to be sold. I looked about for something to do. The village teacher was willing to give me private lessons in shorthand. I spent the winter in study and secured a position with a Philadelphia firm at a small salary. I worked hard, both for my employer and in perfecting myself in stenography. When my employer became a partner in a new manufacturing concern I secured, with his influence, a position as stenographer in the office of the new firm. After the business got under way the manager was away a great deal and many of his duties devolved on me. Gradually I learned the details of the business and long before I was regularly appointed as manager I was the real head of the concern. Later I became the head of a combine which

absorbed our enterprise and here I am. 'In the promised land,' I said. 'Yes,' he replied, 'and I did not have to wander in the wilderness for forty years and I never had time to murmur and, therefore, I never had to suffer any special punishment.'"

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PRACTICAL STUDIES

Determine what proportion of those who were graduated from the courses in stenography of your high school continued to depend upon stenography as a means of a livelihood five years after their graduation.

CHAPTER XXV

Salesmanship

The output of the factory must be disposed of or the wheels of industry will stop. It is the salesman who does this important work. The consumer needs the product of the factory and of other productive agencies, and the salesman is the medium through which he procures it. The salesman's place, then, in our economic system is an important one. So much thought has been put into the development of business and business methods that it has the characteristics of a profession, and salesmanship has become a science and an art. The salesman must be efficient or both himself and his employer will suffer from his retention in his position and the customer will be poorly served.

Personality counts for much here as in every other vocation. The elements of personality are many and self-study is difficult, but an honest self-examination will result in self-improvement, if one is really desirous of improving himself. Personality cannot be materially improved or strengthened in a day, but as years go by, faithful application to study and work and a determination to become stronger and better will result in an increase in the force of all that goes to make up personality.

The appearance, so far as cleanliness and neatness go, is often a determining factor when employers select some one from a number of applicants. A large em-

ployer of labor says: "Many a young man has received short audience in my office because his linen was soiled and his hands yellow with nicotine." The employer knows that he cannot win and hold the greatest possible trade with salesmen who present such an appearance.

A knowledge of what is to be sold is essential and the more thorough this knowledge the better. A knowledge of human nature is also essential and this furnishes an endless field for study. Courtesy, cheerfulness, amiability, willingness to serve even at personal inconvenience, all of these things count for much. The tone of voice, the words spoken and the general deportment are things that either please or displease the customer quite as much as the goods you offer him.

Accuracy, diligence, patience, perseverance and punctuality are all needed in salesmanship. The boy who attends school regularly and faithfully applies himself to the work of the school will have these qualities developed and strengthened in him. The boy who remains in school and gets the best out of the school by doing his part there will be well prepared to gain rapidly from his experience as a salesman.

Care of the body and cultivation of the mind should go together. A good moral character is one of the best assets a salesman can have. Business ethics to-day do not regard a transaction in which one man gets the better of another a good bargain. A legitimate transaction is one in which both parties are benefited. This is the conception of trade that salesmen should have.

The salesman should feel a keen responsibility for the success of his firm, and he should have a genuine desire to satisfy his customer. Loyalty to the firm demands a

strict compliance with all the requirements of the system of the place.

The positions open to boys of from fourteen to sixteen years of age usually command small pay. In large stores boys usually have to start at $3 or $4 a week; but in the same house you will find employes who have risen from this small pay up through positions paying from $12 to $50 a week.

In a large concern, as a department store, the errand boys, cash boys, floor boys, and all boys doing similar work have before them positions that will be filled from the ranks of those who remain with the firm and render satisfactory service. Employers are continually on the lookout for those who show a capacity for this important work.

The salesman of the retail store has ever a ready greeting for his customer and an instinct for knowing his needs and desires and a patient way of handling the undecided. The inside salesman of the wholesale store has all these qualities well developed, but as he deals with the trained and experienced buyers he must be in addition a real diplomatist. The agent of the retailer comes to him at certain seasons of the year to buy a stock of goods. He meets him, entertains him while in the city, and he must be ready to advise him about a multitude of matters, and so train his customer that he may be able to market the goods which he buys with profit to himself. He must be able to anticipate the needs of the distant market to which his customer caters and to show him the best methods of advertising.

The travelling salesman is as well trained as either of the others; in addition he must know how to find the customer, the best seasons at which to visit him and be

an expert in rating the credit value of the man to whom he would sell. These travelling salesmen for manufacturers and jobbers form a very large army. They scour the country even to the remote villages. The constant travelling implies many hardships and makes such demands as only the very robust can stand. Most of these travellers prefer to sell their goods on commission, drawing upon their employers for their expenses and having settlements at stated periods. Earnings from $3,000 to $5,000 are common.

The prince of these men is the foreign representative of the large American manufacturers. He is the man who goes out to make markets. He must know his geography, history, politics and economics, and besides he must be an expert in his own line as well as a man trained in business methods, commercial law and trade customs.

The auctioneer needs all the qualities of the foregoing and in addition he commands the insight into human nature which only the trained psychologist can command. He is a ready wit, a persuasive speaker as well as a keen business man with a wide knowledge of merchandise and of prices. The auctioneer is found in country districts where he is called upon to sell live stock, farm equipment, household utensils, and real estate. In cities he sells out the stock of bankrupt firms, accumulations of unclaimed shipments for express and freight companies, houses, building lots, stocks and bonds and even railroads. The pay is usually a percentage of the receipts and these often run into large amounts. He is required to hold a license from the city on which he pays a tax and in some cities he is

required to give a bond which is forfeited if he fails to observe the laws which regulate these sales.

Energetic young men who desire in a short time to make expenses for their college or professional training can readily find opportunities to engage themselves to sell goods on commission by canvassing. Towards the end of the college terms the representatives of publishing houses and manufacturers visit the colleges to make up squads to sell goods. Training is usually given to these agents and from $3 to $5 per day above expenses are the usual earnings. Canvassers for books and high-class publications and periodicals earn large amounts.

New inventions for housekeepers, handy fire apparatus, improved farm machinery, and improved processes and devices for manufacturers are usually introduced by agents. The most experienced of these men sometimes establish themselves as selling agents for patented articles, contracting with the manufacturers of such articles for the exclusive control of their products in certain territories, agreeing to attend to the advertising and selling of the same in the territory assigned to them. Such men do not require a large amount of capital.

The large life insurance companies have district agents who have the exclusive charge of certain sections for their respective companies in the same way.

Closely related to the business of selling is the work of making collections. The collector must have about the same qualifications as the salesman. Books, pianos, real estate, even clothing and all articles of use and luxury are often sold on installments which are payable at certain intervals. The collectors for the sales agents make their rounds among the customers to collect the

installments as they become due. Sometimes it is their unpleasant duty to reclaim the articles when the purchaser cannot pay the installments. For this reason such positions are not eagerly sought and the houses that need men for this work usually have openings.

Fully one-fifth of the population of the country is found in sparsely settled localities. Many of the people only occasionally find the time to visit the great distributing centers. At all seasons they will need articles of use and as their prosperity increases they will furnish a ready market for articles of luxury. Advertising matter will reach them through the mails and articles of merchandise are cheaply distributed through the agencies of the parcels post and the express companies. Arrangements can also be made for collecting and returning to the shipper the charges for merchandise delivered by them. This will mean an extension of the fields of operation of the mail order houses and the purchasing agents. The largest mail order house in the world was started in 1886 by a man who was a railroad employe. He gave his outside hours to a business of this kind which he conducted from his own home. The largest periodical selling house was started in a similar way by a teacher. Success in such work demands a genius for organization, a wide knowledge of the needs of different classes and a capacity for detail.

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CHAPTER XXVI

Advertising

The visitor who walks into an advertising office will meet the office boy, polite, neat, well dressed, working at a desk in the outer office. His card will be taken in to the manager who will receive him after he has finished an interview with the representative of a magazine who has persuaded the manager to purchase a certain number of pages of advertising for twelve issues of his publication. The manager explains to the visitor who is seeking information about the advertising business, that he can purchase these advertising pages at a discount, that he must now seek among his customers those advertisers who would profit by the use of the medium of which he had purchased a share, place the matter before them in such a way that they may be willing to purchase a part of the space.

He shows the visitor into a special service department at the head of which is a young man who obtained his first experience in the advertising business when as a school boy he was the advertising manager of the school paper. This young man is surrounded by shelves containing newspaper directories from all over the country, showing the number of subscribers of each and their charges for advertising. He has before him a request from a mail order house for advice in regard to the most effective way of spending their annual allowance for advertising.

In another department, he will find a small group of experts discussing the best way of handling a commission from one of their regular clients to advertise a new smoke consuming device in such a way that it will be called to the attention of manufacturers.

In another room there will be seen a score of writers and artists whose special business it is to design advertising circulars, booklets, and posters. One man may be designing a poster announcing a winter cruise on the Mediterranean; another working on a booklet setting forth the merits of a new style of automobile. In the editorial department are the samples of work which had been turned out, including everything from a rhyme for the street car announcement of a washing compound to good-sized book setting forth the advantages which a western town had to offer to prospective settlers.

In order that all these people may be kept busy, the solicitors of the firm must be scouring the market, interviewing advertisers and persuading others to become advertisers. They must be supplied with figures and facts showing the value of the services which they have to offer and they must be able to use the arts of persuasion as effectively as any public speaker.

A chance request for information from the young $15 a week clerk in the bookkeeper's cage brought forth an invitation to attend the meeting of the advertising club of the city. The meeting was a revelation. The audience was made up of jovial, enthusiastic virile men, old and young; the paid agents of large department stores who controlled annual appropriations reaching enormous figures, the advertising solicitors for newspapers of all kinds, advertising brokers, and free lances in the business who bought advertising space in theater

programs, church announcements, directories, and sold the same wherever they could.

The year book of the club showed that lecture courses had been maintained during the year which would have been a credit to any professional or scientific association. The rapid increase in the membership of the associated advertising clubs of America indicates the growth of this new profession.

During the address of the evening the visitor received the impression that the successful advertising man must possess the general education of the statesman, the equipment of the psychologist, the taste of the artist, the eloquence of the orator, the shrewdness of the financier, the orderly habits of the accountant, and the mathematical training of the statistician.

As he looked about and saw the prosperous looking, good-natured crowd he could have no doubts about the sufficiency of the rewards which attracted and held men of this type in the field.

By taking one of the many courses in advertising which are offered in all of our large cities or by pursuing a correspondence course, a student may not only secure a good survey of the field and receive a training which will be of value to a man in any kind of business but he will be able to determine his own fitness for the work.

The advertising managers of business houses and the heads of the advertising departments of newspapers are salaried officers whose pay compares favorably with that of other business experts, while the advertising solicitors for newspapers and advertising agencies are usually paid a commission on the orders which they secure.

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PRACTICAL EXERCISES

High schools and colleges have their own publications in connection with which ambitious students may find opportunities to discover their talents both in the selling and the advertising lines.

CHAPTER XXVII

Banking, Brokerage and Insurance

Some men desire to undertake business enterprises which require the investment of more money than that which they themselves have. They will find a banker who has in his keeping idle money belonging to his depositors and arrange with him for the use of this money for a specified time, giving to him as his protection an interest bearing note. Instead of a note he may give the lender a mortgage on his business property. If the business is carried on by a corporation the money for extensions may be secured from a broker in exchange for certificate of indebtedness in the form of stock certificates or bonds. The bankers and brokers are really persons who buy and sell money. There are 70,000 of these persons in the United States, of whom about one-eighth are in New York City, which is the money market of the country.

Some of these men are in business as individuals, others are doing business in partnership, and others unite to form corporations to do business as national banks or as state banks.

Some of these banks are very large institutions employing several hundreds of messengers, clerks, bookkeepers, and watchmen.

There is no place for the exercise of generosity in dealings between bank officials and their customers, and according to the reports of the wage-earners in banks,

dealings between the bank officials and their subordinates are just as impersonal. The routine work in large banks has been reduced to such a system that most of the subordinates are employed in purely mechanical operations. These do not require a great amount of skill or special training nor much capacity for originality, nor any very hard physical or mental labor, but there is a demand for orderliness and reliability and integrity and loyalty.

The work which the beginners are called upon to do can be easily learned and as a consequence the pay at the outset is only $5 to $8 per week. There seems to be a feeling among the workers that there is little chance for promotion unless some one who stands in line dies, but the boy who at sixteen enters any one of the large banks will at twenty be earning as much as those who at the same time entered upon an apprenticeship to a skilled trade.

The number of successful business men who began their careers in bank positions is unusually large. The bank messenger who makes his daily rounds among the customers has a chance to become acquainted with business men and their way of transacting affairs. The clerk on the individual pass books or on the customers' ledgers learns something of the financial requirements of many lines of business; while the clerk in the stock and bond departments has opportunities of learning how to appraise these securities. There is no better training in international trade relations than in the foreign exchange department of a bank.

Many of the young men who are found in the subordinate positions of banks are so placed by their parents that they may get this kind of business training.

With them the matter of wages is of secondary importance. This compels others to begin with about the wages for which these are working. Those who go into banking to study it as a profession will find that these will drop out and that the competition for the higher places is not so great.

One leading bank cashier gives us this history. He left school at an early age and went into the office of an insurance agent. His employer became interested in him and after the boy had outgrown his position in the insurance office a place was secured for him in a bank in which his employer was a director. Later he was transferred by the bank to a branch in a suburban district. Here he had a chance to become acquainted with all phases of the work. While serving his apprenticeship he attended courses of instruction given by the Institute of Bank Clerks.

The credit man of a merchandising concern received his initial training for his very profitable work in the discount department of a bank in which he served an apprenticeship of six years.

Those who simply settle down to the routine work of one department of a bank, depending upon passing years and their ability to secure occasional advances in salary by their persistence in asking, are likely to waken up some day to find that a reorganization of the bank has ushered in a campaign for economy during which many old employes were being displaced by others who were willing to do the same work for a few dollars a week less.

The bank clerk who studies his work as the young professional man studies his; who shows that he possesses a mastery of all the complicated relations which

center in our great banks, cannot be so readily displaced and he will find that those whose incomes are derived from their investments in banks will be ready to pay satisfactory wages to those who can handle their affairs. Salaries of from $3,000 to $10,000 for men thoroughly acquainted with all the details of the banking business are not unusual.

The conditions in the life insurance companies, the mercantile agencies, and the liability and marine and fire insurance offices differ very little from those in the banks.

The fire insurance companies have their expert appraisers and adjusters of losses, the liability insurance companies have also their experts on occupational diseases and industrial accidents. The life insurance companies, besides their usual clerical forces—bookkeepers, advertising experts, stenographers—have their actuaries. These experts are usually developed out of those who enter the service from the foot of the ladder.

The actuaries of the companies determine what rates are to be charged for policies of different kinds. This determination involves many intricate questions and the one who aspires to enter the departments in which these problems are handled must be especially skilled in all kinds of mathematical work, more especially in algebra. If his service as an office assistant attracts the favorable notice of the chief actuary of a life insurance company he may be recommended for membership in the Society of Actuaries and secure his election by passing the examination which is set for the junior actuaries. Then begins a period of hard study under private tuition for the examination which is required of the

applicants for full membership in that society. These actuaries rank with the highest of professional men.

The state employs a number of men experienced in banking to examine periodically all banks and insurance companies. These receive salaries ranging from $3,000 to $5,000. These positions and the position of bank examiners for national banks are filled by competitive examinations.

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CHAPTER XXVIII

Some New Business Professions

The highest ideal of many generations found its embodiment in those human dynamos who could drive their fellows to toil for the enrichment of some groups at the expense of others. In our day, the ideal man enriches himself only by his conquest of natural forces and his use of natural resources. The achievements of great industrial leaders have overshadowed the glories of the military heroes of barbarous ages. The greatest achievements continue to be for those who have that capacity for leadership which enables them to hold others to the completion of great enterprises.

In New York City in 1912 there were 1,100 manufacturing establishments employing more than 100 men each; in the city of Buffalo there were in the same year over a hundred such establishments; in these two cities there were 78 manufacturing concerns which employed more than 500 men each in addition to the many large retail and distributing agencies, and transportation companies whose work is done by the concerted action of thousands under the direction of one single leader.

The responsibilities of such a leader are great; the property which he controls may represent the investment of hundreds who are dependent upon the income which they receive from it for their living, the employes whom he directs may have been assembled from afar and devoted all their time and their energies to the

mastery of particular processes in the course of doing which they have become unfitted for any other profitable work. They and the income of their families may be entirely dependent upon the prosperity of the business whose success is determined by the courage, the energy, and the prudence of a single man.

The public service which the industrial manager performs is of the highest kind. In a remote corner of the state one of these found a declining village at the foot of a bleak hill. His resourcefulness secured the capital, organized untrained men into a working force to blast out the rocks, crush them into powder and found a market for the seemingly useless material. His rewards were great, and so they should have been. He combines all the highest qualities of men; he has the imagination of an artist, the analytic power of the philosopher, the constructive ability of the inventor, the organizing capacity of the general, the stoic's indifference to defeat, and the daring of the explorer. The rewards of men of his class are greater than the rich prizes for which the men of the old professions have striven.

The great industrial manager is the prince of the professional men of the day; he must know how to use the lawyer in organizing his industry; he must know how to influence the financier to supply him funds; how to use the architects and engineers, who plan and construct his buildings and machinery; he must command doctors to supervise the human elements of his organization, and more and more, he is expected to have the rare qualities of a pastor of his people in order to secure the loyalty which makes for efficient service.

The processes through which these great leaders are

developed are varied. Not unfamiliar is the man who in a country place began a factory which became the nucleus and the support of a prosperous town. He seems to be a stolid, ordinary man as we see him alternating between the men in his shop and the manager in his office. When at twenty he had learned his trade as a machinist dull times brought about his dismissal. With little money and no prospects, chance brought him temporary work in a village repair shop. He found later that he could secure an abandoned shop among some farmers who were begining to use machinery which they were poorly prepared to handle. He studied the needs of the people in his community, invented such improvements in their machinery as made it more serviceable under the local conditions. He became their consulting engineer; engaged one apprentice after another, training each in turn to take care of some particular branch of the work which he developed. The young men married, built their homes near the shop, which was enlarged from time to time, growing as the village of which it became the center grew. His business became profitable, money lenders saw an opportunity to make him safe loans. He became the manager of a plant of no mean proportions and the patriarch of the village.

In his early school days he had learned something about business; something also about history; in his early manhood he mastered a trade; he also read wisely in odd moments; he foresaw the revival of agriculture, seized the opportunity when it confronted him and had with tireless energy lent himself to the one purpose of serving his day and his community in its modest needs as well as in its more complex requirements.

Unfortunately, this man allowed himself to be influenced by the belief that his workers would be most profitable if confined to some one kind of work, and that he himself could not afford to refuse to give every detail of his growing business his personal attention. He finds himself at an age when he must unburden himself, but he has no one to whom he can entrust any part of the management of a business into which he has grown through an education of two full score of years.

This man and thousands like him are looking for trained and experienced men with capacity for management who can bring the energies of young blood into the affairs of men of years of experience.

Three years ago to another such a man who in a public address bemoaned that young men for such purposes were no longer to be found, I volunteered to produce one. "Bring him on, prove his value, and let him name his price." I recalled that in an intercollegiate debate of an economic question, by seniors who were about to be graduated from college, I was impressed with the clearness of vision and the soundness of logic of one of the speakers who had specialized in economics and business administration. I had known the young man in the preparatory school, knew how he had learned self-denial through his struggles for an education, how he had learned to adapt himself to people by his management of a college mess-hall, how he had acquired business experience through his vacation activities. I presented to him the challenge of the business man. In due time he took up the challenge and began in the humble position of time clerk. Here he became acquainted with the different classes of working people,

learned the plan of organization and the methods of business. Gradually he thought out methods for grading the workmen, new promotion schemes by which the wages of the workingmen were automatically increased as their greater efficiency was demonstrated, and then he undertook to show the men how they might increase their own value to the business and their profit to themselves. The special position of supervisor of workingmen was created for him. The output of the factory was increased faster than the sales force was able to handle it. He turned his trained mind and his untiring energy to the problems of the sales department. The cumulating power of handling the whole of a problem which had come to him by successively mastering arithmetic in eight years, his algebra in two and his geometry in one and larger and longer sciences in shorter and shorter and shorter periods towards the end of his college course brought him the mastery of sales problems in a way that was impossible to those who had grown up in the business and had not his large acquaintance with the subjects of geography, transportation, sociology and finance. His relations to the workmen and the foremen and the salesmen were what the relations of the trained architect are to the bricklayer, the carpenters and the plumbers who erect a building. He became the human engineer for the organization.

The human engineers, coming to the head of affairs in all kinds of concerns, have for their first purpose the economical production of certain material results. They are prone to lose sight of the fact that work is for the man and for his development through his activities and that men are not mere machines for the use of the factory manager. This means that there is room for

another new profession in our complex industrial life; specialists who know the community so well that they can advise others and direct them in the wisest use of those opportunities which are designed to develop the best of the human values in each one. These are the social engineers who are especially needed to supervise those who must go to work at an early age and to direct them in the same way that the college advisers direct the more fortunate ones who can remain in formal training for longer periods. The social and industrial directors of the Young Men's Christian Association, the assistant parish workers of the city churches are building up a profession of great promise and large attractiveness.

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CHAPTER XXIX

The Civil Service

Exclusive of the enlisted members of the army and the navy over 400,000 wage-earners are employed by the national, state and local governments, in all sorts of work. Some of the higher officers are elected by the people for a term of years, others are appointed by the elective officers, but by far the larger number are selected through competitive examinations which are held at stated periods in different parts of the country. The daily papers usually give notice of the times and places for these examinations.

The United States Civil Service Commission at Washington issues twice a year a pamphlet which enumerates the positions which are open, the wages paid, the qualifications required and the times and places for holding examinations. A copy of this can be secured in response to a post-card request. The New York Civil Service Commission issues annually a handbook giving the names and salaries of all persons holding positions under the state and county governments. Those who desire to become candidates for any of these positions as vacancies occur should write to the Commission for information concerning the times and places for the next examinations for such positions. The City of New York issues a similar civil list giving the positions in the city service. This can usually be found at the public libraries. The list of civil employes can be

secured by private individuals for $2.00, at the office of the City Record. Most of the cities and states issue similar lists.

Those who can only do their best work under direction will find the positions in the civil service more satisfactory. After they have passed their period of probationary service, their positions are practically permanent. Governmental agencies do not usually undertake any kind of service until it has become well adjusted to the public requirements and reduced to a routine, so that workers find little opportunity for exercising any capacities for initiative and originality is looked upon with disfavor.

The technical men, who can usually do better in the way of earnings with the government at the beginning of their career, as soon as they discover that they have any special ability are likely to leave the public service in which the pay for the experienced man with special training along technical and professional lines is less than in private employment.

The earnings of beginners and of clerks and mechanics and semi-skilled and laboring classes in public service are usually somewhat higher than in private employment and for this reason the competition for places of this kind is keen, and at every examination there are long eligible lists. Unless a candidate stands high on these lists, appointment is unduly delayed.

Many use the service as a stepping-stone to a profession. Let us say a high school graduate, eighteen years old, who is dependent upon his own resources, wishes to become a physician. His nineteenth year he should spend studying stenography and typewriting. As soon as he has mastered this art he will take the civil service

examination in stenography and typewriting, receiving $900 a year as his minimum entrance salary. If he passes he is reasonably sure of appointment, as the supply of stenographers is limited. At twenty he takes service with the government at Washington and matriculates at one of the medical colleges. The next four years he will spend in the double occupation of serving the government and studying medicine. His annual thirty days of leave will help him out on his studies. Upon graduation he should receive $1,200 a year. He will qualify at once to practice medicine in the District of Columbia and hang out his sign. He will hold his position for several years longer, picking up such patients as he can after office hours. By this time he will be twenty-seven or twenty-eight years old and should have saved $1,500. He is now in a position to resign and go where he wishes to begin the practice of medicine in earnest. Many clerks study medicine or law or engineering in this way. The only thing that might prove objectionable in using the government service as a stepping-stone is that his official duties may be neglected.

The skilled man will generally find the work in the government service more permanent than in private service. The national government needs printers, artists, engravers in Washington, and mechanics of all kinds in the navy yards, and arsenals. The mechanics who are located at Washington must consider that their living expenses will be higher there than in other parts of the country.

The technical and professional graduates who are tempted to accept government positions in order to accumulate funds to support themselves while they are

acquiring a private practice, must understand that employments which take men away from home and acquaintances will tend to weaken those social relations which are usually very helpful to the young professional man. Professional students who have eagerly accepted positions in the Philippine service found upon returning after an absence of a few years that they had not only been forgotten but that they had lost the drift of professional progress.

The foreign consular service and the diplomatic service on the contrary may give a man an excellent preparation for entering the commercial field in foreign countries. This foreign service is being reorganized, student interpreters to a limited number are accepted by the government to go into training just as they are taken into training for the army and the navy, and a regular system of promotion examinations offer inducements to men of more than ordinary abilities.

Other departments of the government are also being reorganized so as to encourage those in the lower grades of service to hope for promotion by systematic training for the higher grades.

The *Chief* and the *Civil Service Chronicle* are two weeklies which are published in New York City. They give very complete information in regard to the requirements for the different kinds of examinations, and full announcements of dates and places of holding them.

The annual reports of the Civil Service Commission report the number of persons who applied, the number who were examined, the number who passed the examination, and the number who were appointed for each grade of service during each year. We note in 1912, of the 7,208 clerks who were examined for the $720 a

year positions, 355 received appointments during the year. Of the 63 physicians who were examined 36 received appointments. The prospects for appointment can usually be fairly well determined by the aid of these tables, and these annual reports are very helpful in determining whether any field of work is overcrowded. If the number of applicants is excessively large as compared with the number of persons appointed and the salary offered is fair considering the expense of preparation it is safe to assume that many persons in that occupation are out of work at the time.

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CHAPTER XXX

Teaching

The young man who combines with a love for study an ambition to influence the lives of others will continue to find a promising field in teaching, which does not hold before him such conspicuous prizes as some of the other professions, but it provides a certain, if modest, income for a relatively long productive period of his life.

It is possible for one who has only a sound English education to secure admission to some of the normal schools which are supported by the state and in three years prepare himself to meet the requirements for certification for our country and village schools. His long vacations will enable him to increase his qualifications by attendance upon the summer sessions in college.

For admission to the teaching corps of the elementary schools in our cities a full high school course, followed by a course in the city normal school of from two to three years, is required. The male graduates of these city training schools are sure of appointment, beginning in New York at $900 and in the smaller cities at wages ranging from $400 a year and upwards. On account of the preponderance of the number of women teachers in the elementary schools, and the feeling that prevails in many cities in favor of men for the supervisory positions, the man who enters these schools will find an open road to promotion to places paying from $1,500 to $3,500.

For appointment to the high school positions a college education with some special courses in the science of education is essential. All of these appointments for teaching special subjects require special preparation. For the most part the preparation can be secured while serving in elementary school positions, either by taking summer vacation courses or by taking evening courses.

The higher positions in school administration are usually filled by competitive examination. The teacher of the special subjects does not have the same chance to get the practical preparation for these examinations as the elementary school teacher. These positions in school administration are becoming more and more permanent and on account of the complexities of our school systems they require a familiarity with all grades of school work. For this reason it is desirable for those who are aiming for these positions to find opportunities for getting a varied experience.

Teaching in the colleges and universities does not at the beginning pay as well as teaching in public or private schools. The young graduate who becomes a tutor receives usually a merely nominal salary until he can prove his capacity and until some vacancy for which he is qualified occurs in the faculty of his college.

Experienced men find remunerative positions in teaching in private schools which receive limited numbers of pupils. Service in such schools affords preparation for those who would embark upon the business of conducting boarding and home schools. The changes in the homes and in the social conditions of our people assure patronage to such schools by those people whose occupations prevent them from maintaining a home at all seasons for their children.

There is now, and there will likely continue to be, an unusual demand for teachers who are qualified to teach trade and technical subjects. Skilled craftsmen who thoroughly know their trades and who are so situated that they can take special courses in teachers' training schools will be able to command larger wages with more permanence in teaching trades than in following their crafts. Such persons can usually obtain positions in evening schools. In this way they may secure experience and prove their fitness for the work.

The requirements for appointments and the times for making appointments vary greatly. The state departments of education have printed circulars giving the regulations governing appointments in the elementary schools of the country districts and the villages; and the city superintendents of our large cities are prepared to answer inquiries from those who are seeking positions in the cities.

The United States employs more than a thousand teachers in the Indian schools and in the Philippine service. The semi-annual bulletin of the Civil Service Commission at Washington gives full information in regard to these.

An influential principal of a large city school states that when he was thrown upon his own resources he had only an elementary school education. One summer he secured employment with a farmer whose approbation he succeeded in winning. This farmer recommended him to the trustees of the country school. He had little difficulty in passing the necessary qualifying examination. He served the district several terms of seven months each, attending the state normal school during his vacations. All the states have such schools.

The requirements for admission are not severe nor are the expenses high. Upon completing the required studies in this school he secured an appointment to teach in a village school at a better salary. During the several years in which he served in this position he attended summer terms at the state university. After acquiring his degree he secured a position in a city high school. His early experiences made his successive promotions easy. High school graduates can readily parallel this record.

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PRACTICAL STUDIES

1. Prepare brief biographies of the teachers in your elementary school, your high school, the principals, and the superintendent of your schools, setting forth where and how they secured their preliminary education, their professional training and the grades and salaries of the successive positions which they held.

2. Make a list of the teachers of your high school who secured promotion or who have gone into other lines of work and try to discover the influences and motives which determined their progress.

CHAPTER XXXI

Musicians and Teachers of Music

In New York, Philadelphia, Chicago and San Francisco, among those employed as musicians and teachers of music, men outnumber women; in the entire country, however, the reverse is true. Our population is increasing gradually and becoming more urban and less rural. Wealth is increasing and the taste of the people is improving; there is an ever-growing demand for better trained musicians.

From an artistic viewpoint the enumeration of money returns to musicians and teachers of music is out of place, but to meet the requirements of the commercial spirit prevalent everywhere dollars and cents shall have their own chance to speak. Musicians have struggled long to be recognized as workers instead of players. At first the trouble was with themselves, for they found it no easy matter to give up the idea that they were artists, even though admitting that they worked hard to earn their living, they wished to be regarded as members of a profession and not of a craft. The next stage in their history is one of trade union development, and to-day no other large union in the American Federation of Labor is more completely in control over the market.

There are teachers of music in practically every community and members of the union, just like non-members, may arrange for classes and secure pupils. Very few of those who study instrumental music regard it as

a vocation to earn a living; but those few must be admitted to the union or outside competition will seriously interfere with the fixed price scale. There are some, however, who have another regular vocation and look upon music as only an avocation which yields them a few extra dollars.

Because of the competition by those who give only a part of their time to the work, the professional musicians have been very enthusiastic in advocating state regulation. Their aim is to secure for their profession the same protection and dignity now enjoyed by lawyers, physicians and dentists, who have passed a prescribed state examination. While this question is being agitated, the musicians' union maintains its regulations, including a minimum wage and the examination of applicants.

The earnings for music teachers not connected with any organization depend upon their natural ability, preparation for the work, advertising methods, and the conditions of the community. They vary from less than a laborer's pay in rural communities to the earnings of professional men in other fields. Theatrical positions are worth from $1,000 to $1,100 with a special bonus to the first violin and the first cornet; for weddings and balls $4 is the usual price until 2 a. m. with $1 additional for every extra hour; for parades members of bands are paid on Sundays $4 for the first hour, on week days $3, with $1 for each additional hour. The musician usually buys his own uniform. The salary which a singer can command will depend upon the demand which he can create for his services. Directors and conductors may attain to very high salaries. Music critics are employed by all the leading newspapers. The

incomes from such work vary very greatly. At the head of this profession is the composer, the creator of music. The average price is not $35,000 but that amount has already been netted by a single American musical composition.

The musician must have an inherited talent to succeed and for his development a musical environment is of the greatest importance. A practical knowledge of the piano is of value to every singer or instrumentalist. A knowledge of theory, harmony, and the history of music must be a part of his equipment. Voltaire once said to Gretry, "You are a musician and a man of mind, sir; it is a rare combination." To-day there has been nothing more common among the great in music than mental ability, unless it is sympathy and affability.

It is possible to make a beginning in music while following another vocation. Good teachers may be secured in almost any locality for the beginner, while the conservatories and universities are prepared to give advanced training. It must not be overlooked, however, that some of our best teachers are connected with no musical institutions, so that in this profession it is possible for the private pupil to rank among the first. There are correspondence courses in harmony which are very helpful.

The orchestral outlook is bright. The growth of music in America is shown by the fact that great artists can be found remote from musical centers, but it must be admitted that for thoroughness of study, in making haste slowly, the establishment of concerted music in the home, the most important factor in the musical greatness of Germany, the restless American is not thor-

oughly schooled. The policy of our American trade union musician is determined by the commercialism which controls our country. He sends the great musician out after the dollar, cheapens the wages of the average musician and too often places him in the same class with other hired help.

The records of successful and satisfied men are not hard to find. A young man whose well-trained voice is heard by every owner of a phonograph receives, during the course of a year, fees which compare favorably with those of the best paid workers in other fields. For a full ten years he had been under training by the best American and European masters. The very large outlay which this involved was provided for by an inheritance. Another, whose father was well able to give him the best of opportunities, had the benefit of the general education to be derived from a course in one of our best universities and a musical training under our leading American masters. In college he attracted attention by his compositions for the musical clubs and for special celebrations. The financial rewards which come to him from his compositions are highly encouraging. A pianist whose success is as fully assured as that of either of the others had no financial resources at the beginning of his career. He had a devoted brother who had faith in him. For six years this brother by industry and self-denial provided for the support of both of them. Their rewards are such as might have been expected from their devotion to each other and to art.

Some who have musical talent of a high order may have no inclinations toward music as an exclusive career. The leader of one high school glee club was able to support himself as a singer in church choirs while he

was taking his law course and accumulating clients. A young pianist is earning $12 a week in a moving picture theater while he is taking his college and his professional school course. A physician supported himself while in his professional school by giving lessons on the violin. In any history of music will be found the records of musicians who have proved that success in this profession is not necessarily preceded by a course in partial starvation during the struggle for recognition.

The leading conservatories of music give courses of training in expression for reciters and public entertainers. The increasing popularity of the summer Chautauqua assemblies has created a demand for men of vivid imagination, a capacity for intense feeling with a thorough training in the art of public speaking.

It is an easy step from the entertainment platform to the stage. The candidate for the stage usually serves as an apprentice in some unimportant part for a trial period. Technical training can be secured from private instructors in a few of our larger cities. Such instruction, however, is not well organized.

The only definite knowledge about the income and the prospects which the stage offers to the average actor is found in the census reports. In 1910 only 8 per cent. of all of the persons reported as actors and professional showmen were of the age of 45 or over. This means probably that a comparatively small number of persons find this work profitable enough to hold them for a very long period of years.

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PRACTICAL STUDIES

1. Prepare biographical sketches of the organist of your church; the soloists in your church choir; the music teacher in your school.

2. Take the classified directory of your city and note how many of the names of persons listed as musicians and teachers of music in 1905 failed to appear in a similar list for 1915.

CHAPTER XXXII

Religious Work and Social Service

A man is more than a wage-earning machine. Through his income-producing activities he earns that support which is designed to permit him to satisfy his intellectual longings and his spiritual aspirations. He needs wise leaders to perform properly these higher functions. For two thousand years those learned members of society who constituted the moral and spiritual leaders have made the highest contributions to progress; they have led the pioneers of civilization into the untrodden wilderness; they have pointed out the way of escape from persecution and oppression; they have preached righteousness, stimulated benevolence, promoted education, encouraged charity and relief.

The tendencies toward a larger measure of individual liberty in recent centuries has brought about such a subdivision of the agencies which have stood behind these workers that the financial support accorded to their ministers has not been as liberal as their high requirements would have seemed to demand. It is estimated that the average salaries of pastors and church workers throughout the country is less than $1,000 per year, although in many cases considerable contributions are made to their living expenses in addition to their stipends. It may, however, be noted that at no time have people of all classes been more ready to accord liberal support to those who by their preparation and

devotion have shown their capacity for leadership in the work of social regeneration, so that we find in a few churches in each of our large cities religious workers who have assured incomes of over $5,000.

More recently there has been an apparent tendency toward the consolidations of religious organizations. This prophesies for the near future an increase in the number of societies whose resources will be more adequate to support energetic movements under capable leadership.

No young man who is looking for a promising career should overlook the advantages which would accrue to him by an alliance with social forces so powerful that in the single year of 1913, in New York City alone, they have influenced men to make voluntary contributions of over $10,000,000 for the unselfish work of religious organizations which had in the same year over $200,000,000 invested in property which was devoted to their work. Those who contribute so lavishly to these enterprises will not fail to make adequate provision for the support of those who are ready to devote themselves to their service.

All of the great denominations are earnestly calling for recruits for their ministries. They are ready to provide liberally for the expenses of training those who prove their capacities and show their readiness to undertake the prescribed preparation which includes in addition to the regular college course from two to three years of special training. A living is assured to the graduate from the very beginning of his career but more than in any other profession will his future be determined by his possession of the somewhat rare special aptitudes for the work.

The chief qualities essential in one who aspires to the office of a minister of religion are a devout temperament, strength of character, idealism, a genuine social sense, some practical ability in managing details and a capacity for scholarship. To make a perfect minister obviously would require a perfect man. But if a young man is conscious of possessing even in an elementary degree the qualifications mentioned, he may be sure that there is a place of usefulness open to him in this high profession.

The graduate is usually assigned to missionary service in new fields, to a position as assistant to the pastor of a city congregation, or to work in connection with some special social service department. For those who develop a capacity for leadership without showing any great abilities as public speakers, there are increasing opportunities for work in settlement houses and the social centers. The head workers are paid salaries ranging from a bare living to $4,000 a year, and the assistants earn about the same wages as those which are paid to teachers in the public schools.

For many generations it has been easy for the young college graduate with a few years of experience in teaching young people in our schools to enter upon this work of instruction of older persons in the arts of correct living in our churches. At present it is just as easy for the young man who does not so easily fit himself into the more formal programs of the schools to enter these larger fields of more varied activities.

For those who would enter upon some avocation to keep themselves from the intellectual and moral stagnation which is so easy in many routine employments

the fields of social work afford ever ready opportunities for altruistic service.

Special schools for training social workers exist in most of the large cities in which helpful courses are given to those who would enter upon volunteer service of this kind.

The pastors of all churches will be found ready to give advice to aspirants for this kind of service.

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CHAPTER XXXIII

The Graphic Arts

Occasionally we find in a group of young people some one who has the power to see vividly the things that are not yet made, whose insatiable demand for knowledge of all kinds gives promise of the possession of a breadth of information regarding the possible sources of the materials out of which dreams may be made real, who have also the inventive skill to adapt selected material to specific purposes and executive abilities to carry to completion purposes once formed. Such persons will be sure to succeed in the ever-widening engineering fields. If they have neither the funds nor can command the time to make the extensive preparation which success in engineering demands they may find remunerative and attractive fields in draftsmanship. The graduate from the engineering school frequently begins his career in the drafting room.

In any city of varied manufacturing industries about as many recruits will be needed for this work as for any one of the learned professions. They are needed to make charts and diagrams for the financier to represent to him the rise and fall of market values; for the government official to show the relative increases in receipts and expenditures for public purposes; by the scientific man to picture to the eye of the public his discoveries.

Signs and placards are needed by business men to advertise their goods. Maps are demanded by the trans-

portation companies and in city departments to preserve the records of their properties and by real estate men to show plans for new developments.

Every kind of manufacturing concern needs working drawings for use by their mechanics. A single architect may need a score of draftsmen to make from the designs for buildings the detailed drawings of the parts of the structures. The inventor and the decorator are both dependent upon the skilled draftsmen and every large newspaper office employs them.

For success in this work habits of neatness and precision are first requirements, thorough training in arithmetic and some knowledge of geometry are essential and not any great measure of success can likely be achieved by the worker who lacks good eyesight, a pair of dexterous hands, or the ability and disposition to do steady and faithful plodding.

The apprentice in the drafting room may be an elementary school graduate, who begins as a messenger or office boy at $5 per week; or he may be a high school graduate, who begins as blue printer or tracer or who is assigned to the work of filing and indexing maps or plans or to lettering and filling in drawings, at about $10 per week, and, if he keeps on with his studies, he may be advanced to $30 or $40 per week. In many first-class offices under the direction of highly successful men a beginner can well afford to serve an apprenticeship on any terms.

In reports from fourteen manufacturing cities there were listed: 745 draftsmen with average annual salaries of $893; 46 designers making $1,127, and 220 artists making $1,245.

In the various departments of the New York City

government in 1914 there were 32 draftsmen appointed beginning at $900 a year, while at the same time there were in the service of the city 55 who had attained a wage of $1,200 after an average service of two years, and 95 who were receiving $1,500 a year after an average service of six years, and 216 who were receiving more than $1,500.

The draftsman who develops along the artistic side may, by attending the evening course in the art schools, prepare himself to take up designing or illustrating, while those whose chief interest lie in constructive work may prepare themselves for the engineering professions. In the fields of teaching there are also continual demands for experienced men. A few interviews with successful men who began as draftsmen will be helpful.

How did I become a draftsman, and why? Well I must think a bit. On account of the sickness of my father I was compelled to leave school at sixteen, after attending the high school for a part of a term. I just took the first job that came along, which was package-boy in a wholesale house at $4 a week. I entered the evening school, and, having acquired an interest in drawing in the day school, I enrolled in the mechanical drawing class. One day a teacher looked over my work, asking what I was doing, how much I was earning, what my prospects were, and what ambition I had. A few days afterwards he sent to my class a letter of introduction to one of the heads of a department in a construction company. I secured employment at $8 a week, and for a while was engaged in ruling and designing, filing cards, and learning the routine of a first-class office. After a year, during which I was advised

by my teacher to master lettering, I was advanced to $10 a week.

After completing the work of the evening school I was advised to enter the Young Men's Christian Association for a course in architectural drawing, and work becoming slack in my office and there being prospects of my being laid off, a place was secured for me in the drafting room of a public service corporation at $12 a week. My practice here was lettering, indexing drawings, and keeping map records. By the time I had finished my second year I had been advanced to $15 a week, and, as my hours were comparatively easy, I had time to follow up my school work. I enjoyed my work, had an easy time and would have been satisfied, but my old evening school adviser got after me with a prod, and urged me to seek a place where I could use my new acquisitions and secure a wider experience. I talked the matter over with my foreman, broke in a successor for him to do my work, and through his assistance secured a position with a furniture company in the designing department at $18 a week to start.

I am now 22 and have finished the course in architectural drawing.

What are my plans? I find that I need more training in mathematics and a knowledge of the elements of design. I have saved some money, and after I have completed my courses I shall try to get into the office of a first-class architect on any terms which may be offered.

Why did I become a draftsman, and how? Well, to tell the truth, I just drifted into it. I was compelled to leave school at sixteen without any special training. I chanced into the office of a building concern

as a messenger. After a while I was advised to enter evening school for a course in mechanical drawing, so as to be able to secure promotion. After a year I was put on copying work. I did this for three years, was advanced in my salary and then took a notion that a man with a knowledge of mechanical drawing and construction would have a field of usefulness in the law office of firms which specialize in the business of contractors and builders.

I had saved some money, and at twenty-one I entered the law college, working during vacations in the shops of my first employer. I am now on my law course, and I am still doing work in the drafting rooms in my otherwise unoccupied hours.

Why did I become a draftsman? That is not going far enough. I started by securing a job as an apprentice in a machine shop at $3 a week. It was a large firm, and I determined to master the trade. I soon learned that the elementary education was not enough, so I studied at the evening high school. Machine work interested me, but, as I grew older, I became dissatisfied. The shops were unsanitary, the hours long, and the associates were mostly of the variety show kind, and I might add that the firm seemed to have little interest in the workmen beyond getting the maximum of work out of them. The wage outlook for me as a machinist did not seem to promise anything beyond $18 a week.

After three years of shop work it was try something else or push ahead in the manufacturing line. I watched my chance, and, by the help of my evening school training, I managed to get into a drafting room as a tracer, at $10 a week. I soon discovered that my shop experience, as much as my school training, helped

me to advance rapidly in the drafting room, but merely getting into the work does not make a draftsman. For five years I studied continuously all sorts of subjects related to my work. All this paid me, for I find myself at the end of 12 years of work making $2,200 a year, and I am still on the lookout for the job higher up, and am using all my spare time to qualify for it.

He was a young Italian. When his evening school teacher discovered that he possessed some artistic talent he was just a messenger boy, doing errands at the usual small pay. He was given a course of instruction in industrial design. After he had made some progress a position was secured for him in a box factory. He saw his opportunity and submitted to his employer designs for special orders which attracted attention. Occasionally work of this kind was given to him to do for extra pay.

Later he entered upon a course of free-hand drawing at the art school, saved what he could, and at 25 years of age he finds himself, by the help of his own exertion, in the last term of his course in one of the noted European art schools, with a profitable contract for illustrating a set of books for one of the leading publishers of the United States.

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CHAPTER XXXIV

The Engineering Professions

An engineer is an overcomer of difficulties. He is the real wonder worker. In no age have there been accomplished so many marvels as those which in recent years have been wrought out in accordance with the plans of the great engineers. Who would not be an engineer? To succeed he must know mathematics and love it. Physics and chemistry and geology must be right in his line. He must be a master of expression, be familiar with legal methods and business practices.

There are many branches of this profession. The civil engineer measures land, lays out railroads and cities; the bridge engineer spans the rivers; the hydraulic engineer builds water works for cities and power plants to turn the energy of flowing streams into electricity; the mechanical engineer plans machines and supervises their construction, oversees their installation and directs their operation; the electrical engineer makes the plans for the distribution of power and light and heat; while the sanitary engineer looks after the health of our cities and destroys the breeding places of disease and pestilence.

In many great enterprises there is one master with a whole army of assistants, high and low, and there is generally a ready opportunity for the well-equipped young man to get admission to the ranks which are directed by the master minds in engineering.

The pay for the beginner is not large, being $12 to $15 in railroad service and from $18 to $20 with government surveying parties or in municipal work. Many of these apprentice positions may be entered by the high school graduate, but those who enter upon this kind of work with such limited equipment will find the opportunities for promotion also very limited and that for the really important position the technical graduate who has proved his capacity is preferred.

The training which is prescribed for the engineer is so extensive that it is hardly possible for a young man to meet the strenuous requirements while he is earning his living even though he may be favorably situated for taking courses of study. The civil engineer who aims to get into construction work in which practical experience is of more importance than theoretical training may, while he is serving as assistant to a foreman, acquire enough theoretical knowledge in his periods of unemployment or through the aid of correspondence courses to help him to no mean positions.

The practical miner who has a sound general education may by the aid of such short courses qualify as a mining inspector, and the foreman of a construction gang may in this way prepare for an appointment in the highway department of the state.

The prescribed courses for the first two years of his college training in engineering is practically the same for the student in all of these branches so the selection of a specialty may be deferred until the beginning of the third year in college.

The mechanical engineer in the service of a manufacturing plant may have a fixed residence and a permanent position at wages ranging from $1,500 to $2,500,

depending upon the size of the plant and the complexities of the processes; the mechanical engineer who installs special types of new machinery for the customers of his employer lives a sort of a roving life. He will soon seek to become a consulting specialist ready to serve any who may wish to call upon him.

The conditions under which the electrical engineers, the sanitary engineers, and the bridge engineers work are not unlike the conditions which are offered to the mechanical engineer.

The civil engineer lives a more unsettled life; his employer may be a contractor of public works who may need him one month to make a survey of an irrigation project in the far west; the next month to supervise the construction of a breakwater along the Gulf Coast, or again to assist with work on a subway or a railroad terminal in an eastern city. The mining engineer may never know a home but a passenger car, or enjoy any conveniences except such as he will find in the rude mining camps of remote mountains.

The young engineer who has any capacity for business has exceptional opportunities to make profitable business connections. This may explain why, according to the census reports, such a small percentage of civil engineers are given as of the age of 45 years and upwards.

According to the reports of the United States Civil Service Commission for the year ending July 1, 1913, 30 of 61 applicants qualified for the one appointment that was made to a civil engineering position although the salary was only $1,500; 23 out of the 45 applicants for seven openings as mechanical engineers at $1,800 passed the examination; while there were 28 applicants

for seven vacancies in the Reclamation Service at $1,080. This would seem to indicate that the competition for positions is keen.

From an examination of the vocational records of 619 persons in the engineering departments of the City of New York, classified as civil engineers, transitmen, levellers, rodmen, axemen, those in the upper third of the scale average $2,941 a year with an average of thirteen and a half years of service to their credit; the middle third average $1,513 a year with an average of ten years of service; the lower third average $978 a year with an average of seven years of experience. This seems very low, but it must be remembered that New York is one of the great engineering centers of the world and the thousands of young students eagerly enter these lower grades of work in the great enterprises for the experience which they can obtain.

Mr. George A. Damon in 1904 made a canvass of a hundred representative electrical men in Chicago. Twenty per cent. of them had no college education. Their average age at the time was 33 years and their average income was $3,440.

A tabulation of those in the engineering corps of ten large railroad companies shows that the wages range from $10 a week for axemen to $200 a month for the chiefs of parties. The average salaries of 94 civil engineers in the Geological Survey in 1912 was $1,513. Those in the service of New York state in 1912 averaged $1,754.

The engineer who devotes himself to private practice considers $15 a day and travelling expenses as a low charge, $50 a day being not unusual, and great specialists are known to have made charges of $500 a day.

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Jackson, D. C. Demand for Young Men in Electrical Engineering. Scientific American, Nov. 25, 1911.

McCullough, Ernest. Engineering as a Profession. Williams, 1911. A very complete review of the requirements and prospects.

Waddell & Harrington. Addresses to Engineering Students. 1912. Contains addresses by leading engineers of the United States to the students in engineering schools.

PRACTICAL EXERCISES

Write imaginary interviews similar to those at the end of the last chapter on the Graphic Arts with the following persons, securing the necessary information regarding their education and preparation from the biographical dictionaries:

Alfred C. Boller,
Charles B. Brush,
Wm. H. Burr,
Marc I. Brunel,
Leffert L. Buck,
John W. Graydon,
Charles W. Hunt,
John Hays Hammond,
John B. Jervis,
Othniel F. Nichols,
Alfred Noble,
David McN. Stauffer,
John Smeaton,
George Stephenson,
Worcester R. Warner,
Samuel T. Wellman.

CHAPTER XXXV

Chemistry

During the decade preceding 1910 the number of chemists, assayers, and metallurgists in the United States increased 84%. These are employed by the national, state, and city governments in inspecting food supplies and testing the raw materials which are needed for the public service and in examining the water and the gas which is supplied to the public by corporations. Private concerns also used them for testing their raw materials and for making investigations into the character and qualities of newly discovered vegetable and mineral products and for finding cheaper methods for manufacturing their products.

Chemistry fascinates the student whose leanings are toward scientific pursuits. It leads him into a field of wonder and mystery which has emblazoned over it the records of discoverers whose careers read like romances. Even the beginner in the science may get glimpses of most tempting prospects.

The great usefulness of chemical knowledge in all kinds of practical operations has compelled school and college authorities to make chemistry a part of all practical courses of instruction. This has created an unusual demand for teachers of the subject for all classes of schools.

In the examination of metals and alloys, coal, coke,

oils, and food the work is of a routine character, which is readily learned by the laboratory assistant who has a general knowledge of chemistry and some laboratory experience. In the blast furnaces samples of molten metal are drawn from the furnace and subjected to the same tests from day to day. In the laboratories of the milk supply companies simple tests are applied to milk to determine its purity and the contents of butter fats, and in the laboratories of the builder and the manufacturer of fertilizers the same tests are applied over and over again to cement and paint and the raw materials from which fertilizers are compounded. The assistants in such places and the routine workers are paid from $15 to $25 per week and, while positions can be secured by those who have had a very limited training, they are also eagerly sought by the graduates of technical schools who need practical experience. When promotions are to be made to the superior positions these technical graduates are always preferred.

These graduates after a few years of experience become eligible for appointment to the higher government positions at salaries ranging from $1,400 to $1,800 per year. There are positions paying much larger salaries, but the applicant must have had, in addition to his technical course, either a postgraduate course or he must present evidence that he has done some investigations in new fields. Those who have had experience in such investigations for the government are eagerly sought by private corporations with whom the pay for such work is somewhat higher than that which the government pays and salaries from $3,000 and upward are not unusual.

In every city there are many of the smaller manu-

facturing plants who do not have enough work to warrant them to have or employ high-grade men. These occasionally call upon experts to advise them and to test their materials. This makes work for the private practitioner, who may have scores of clients. One man may specialize in the manufacture of soap and do all the testing for a dozen establishments. Another man may render the same kind of service to a score of manufacturing confectioners, or to bakers. Fuel testers are numerous. They are called upon to test the heating qualities of coal. Those who do this work have their own laboratories and their incomes are dependent upon their ability and their chemical knowledge and skill. In these private laboratories the beginner will get a more varied experience than he will secure by doing routine work for a single concern.

Many teachers of chemistry, by doing private work in connection with their teaching, gradually accumulate enough clients to warrant them to devote themselves exclusively to such work.

The work of the chemist is not without its temptations. Those who have made for themselves reputations are beset by requests for endorsements of all sorts of products of doubtful value.

The boys who have studied biology in the high schools have learned that there are many minute forms of animal and vegetable life which are harmful, and that there are others which may be helpful to man. The bacteriologist gives his time to the investigation of these forms. He seeks ways of stimulating those which are helpful and of controlling those which are harmful. The yeast manufacturer calls to his assistance the bacteriologist as well as the chemist; the doctor requires

his assistance and his advice; the state calls upon him for help in controlling diseases of plants and animals. These bacteriologists work in laboratories. They must be specially trained as well as those who would succeed as chemists. The work of both requires constant study and close confinement, and no royal road has yet been found to success in either of these promising lines of science.

The boy who adds to a fondness for laboratory work some artistic taste and a capacity for business, even though he may not be able to complete a college course, may find a promising field in photography. Service in a good studio forms the best preparation for a business career either in artistic or in commercial photography. With the work of the portrait photographer all are acquainted. No large capital is required for establishing and maintaining a studio in residence districts of cities or in small towns. In the larger studios the work is subdivided. The studio man being an artist skilled in the principles of composition, the retoucher is likewise an artist. The pay of these men is about equal to the pay of a good mechanic.

The commercial photographer works for manufacturers, serving perhaps several clients at the same time, much as the practising chemist does. With the public service corporations they hold themselves in readiness to proceed to the scene of accidents to make photographs, and on the staffs of newspapers they are needed to secure pictures of points of interest to readers. Travellers, explorers, scientific men, and government bureaus also need their services. The development of the motion picture business has increased the demand for photographers.

The shortest road to success in these rapidly develop-

ing technical fields leads through the college and the technical school, or the university, but there are by-paths through which the energetic high school graduate may find his way. The story of one of these reads as follows:

In the high school he had been fascinated by the experiments of the chemical laboratories to such an extent that he sought and found a very humble position after the graduation as the assistant of the chief chemist of a manufacturing concern.

While serving in this position he spent his nights in the technical school pursuing advanced courses in chemistry. His intense interest in the subject influenced his chief to recommend him to one of his acquaintances who desired to institute some special investigation into wood staining and fireproofing. The young man plunged into this work with enthusiasm, applied himself with industry, and accomplished some noteworthy results in this field. When the corporation was formed he put his discoveries to commercial uses and became the superintendent of the plant in which the work was carried on. Before he was thirty years old he made himself the master of the very profitable industry; master of an industry which was profitable to himself as well as to his employers.

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CHAPTER XXXVI

Architecture

The young draftsman who discovers that he combines artistic feeling with constructive ability should take some courses in architectural drawing and try to secure a position with some good architect. Until he acquires some experience and learns the ways of the office his pay will be somewhat less than the pay of the mechanical draftsman. After he becomes familiar with the requirements of the building code and can fill in the details of a building plan, knows how to make computations, he will be able to make fairly good wages, his associations and surroundings will be good and his working hours short. The architectural draftsmen in the municipal departments in New York City are paid $1,800 a year.

Formerly the young man who expected to become an architect would work in the office of some experienced master without wages and pay a premium in addition for the privilege. After he had served his apprenticeship and served a short period as an assistant he would open an office of his own, submit designs to those who contemplated building houses and, if his designs were accepted, he would make the plans for the builder and make the contracts with the mechanics and superintend the construction, receiving usually 5% of the cost of the building for his services.

All this has been changed. The builder of a dwelling

house buys printed plans which he hands over to the contractor, and the construction of the great city buildings calls for their supervision men who have had the most extensive training. The architect must have the eye of the artist; the skill of the designer; the civil engineer's knowledge of the strength of materials; the ingenuity of the mechanical engineer in devising the machinery for construction; the science of the sanitary engineer in providing for drainage, heating, and ventilation; the ability of the electrical engineer to determine the distribution of light and power. If he is to supervise the building operations he must also know the legal restrictions which the city imposes and the laws of contracts and the methods of handling working people.

This means that not one man but a syndicate supervises the construction of the great buildings which provide for the comfort of the city dwellers and the conveniences of the workers in offices and factories.

Such a syndicate may be made up of a group of specialists working under the direction of a single man or of several partners who must have great executive ability.

A long college training supplemented by several years of travel and study in foreign countries now constitute the usual preparation for the architect. With this preparation he will have no difficulty in getting a trial at a living wage with a first-class firm. This seems to be discouraging after such an expensive training, but if the time has been given to conscientious study his promotion will be rapid. Few professions offer so many large prizes both in the way of money returns and in enduring fame.

The naval architect who plans the construction of

ships undergoes a course of training in one of the few special schools which are found in this country. Webb's Academy for Shipbuilders in New York offers a limited number of free scholarships which cover all expenses.

The landscape architect lays out parks and private grounds. He is familiar with building methods, road construction, drainage operations, and must know something of forestry and horticulture. There is not much of an opportunity for boys to serve apprenticeships with landscape gardeners, but high school boys who have recommendations for accuracy and carefulness can readily find openings with architects. In some cities they are expected to serve for a while without pay; in New York they begin at from $4 to $6 per week, increasing $2 per week for each year of service. The beginner will be a messenger about the office, assist in filing papers, maps, and drawings; later help in making computations, and, if he gives evidence of fitness, in filling out drawings and in lettering them.

There has been a large increase in the number of architects in this country since 1900. The number now is about equal to the number of dentists in the entire country, but most of them find their work in the large cities. The census shows that a large number of those in the profession are over 45 years old, which means that the returns are so satisfactory that those who take up this work remain at it.

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PRACTICAL EXERCISES

1. Make a list of the architects who have designed some of the most attractive buildings with which you are familiar, look up their story in the biographical dictionaries to learn how they became famous.

CHAPTER XXXVII

Dentistry

The number of dentists in this country has trebled in three years. If the entire country were to be as well supplied with dentists as some of the prosperous cities, like, say, Hartford, the number would have to be doubled at once. People are beginning to appreciate the value of proper nutrition and to learn the value of the teeth to the efficient man. We may expect them to demand a constantly increasing amount of attention, both for adults and for children.

While the successful dentist should have the qualities of the physician, intellectual and social, he must in addition be a man with very considerable mechanical aptitudes and be, moreover, of an inventive turn of mind.

A high school course of instruction with emphasis upon chemistry and physics and manual training supplies the best preliminary education. Fifty-three of the dental colleges in the United States require three years of study and two of them had courses extending over four years. The tuition fees range from $50 to $200 a year, the usual rate being $150. The number of graduates for 1911 was 1,764, rather less than an adequate number to provide for the same ratio of increase as in the past three decades, and to supply the places of those of the 39,000 dentists who drop out of the ranks from natural causes.

The work of the dentist is confining, and there is a

constant temptation, as one dentist puts it, to put in an excessive number of hours into the day's work to meet the convenience of patients with many and varied business and social engagements.

In the large cities the graduate dentist can readily secure a salaried position as an assistant to established dentists or as an operator to one of the many dental syndicates at from $20 to $25 per week, thus enabling him in a short time to save the money which is needed to make his first payments on his own office equipment. There has been a great advance in recent years in dental machinery, and it is estimated that the equipment of an office which is up to date will easily cost $1,500.

It is the opinion of more than a score of established dentists in New York City that the young practitioner who exercises care in the selection of a location will make his expenses by the end of his first year, and that during the first five years he should be able to show average net earnings of $1,200 a year. In our largest cities it is estimated that office expenses, including rent, in a residence district, will be over rather than less than $1,500 a year. To permit the dentists of New York City to meet these expenses and acquire an average net income of $1,500 a year would mean a per capita outlay for all the people of the city of less than $2.50 a year.

Dr. George W. Clapp, editor of the *Dental Digest,* after an exhaustive study of the income of dentists supplies these statements: "Men who join to average professional ability, good address and good business sense readily net $5,000 a year; while there are many who have keen business sense and high professional attainments who net from $8,000 to $12,000 per year."

"Regarding the prospects for young men," he continues, "permit me to say that I would have, for my own son, a feeling of entire satisfaction if he were to take up the practice of dentistry, having received due preparation. The amount of dental work to be done is increasing; besides, the dentist is, in a large part, his own master. His practice, once established, can be taken away from him only by some fault of his own or such misfortune as would disable him."

All of the states have special boards of dental examiners. Persons who expect to practice dentistry in the states must appear before the examiners and prove their fitness before license can be issued.

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CHAPTER XXXVIII

Medicine

A successful physician suggests that a boy who thinks that he has a call to study medicine should apply to himself the following questions by way of an examination:

1. Do you, as far as you know the conditions, care more for the practice of medicine than for all the other alluring things of life?

2. Would you rather be a physician at a mere living wage than be wealthy in any other business?

3. Are you willing to make sacrifices and endure hardships for the sake of those rewards which come to the average physician?

The physician must have health to withstand infection and to endure at times great strains and to overcome the effects of interrupted sleep and irregular meals; he must be able to think clearly and to act quickly and know how to meet all classes of people in an even-tempered manner.

Because of the initial struggles which fall to the lot of the young physician in common with the beginner in every profession there is a general impression abroad that the profession is overcrowded. The city of Boston had, in 1910, one physician to each 358 of the population. If the whole country were to be supplied as well with physicians as Boston, 100,000 additional physicians would at once be needed. If the unusually large num-

ber of physicians in Boston were unable to make satisfactory livings they would probably take up some other business and be listed in the census under some other occupation, or they would locate elsewhere, but the fact is that those who continue to practice till after the age of 45 form as large a proportion of the whole number as in the entire country for which we have one physician to every 640 of the population.

In the city of New York we had in 1910 one physician to every 578 persons. Assuming that the average requirements of each person would be one visit a year from a physician, and one office call, making average per capita fees of $3, it would bring the average income of the physicians to over $1,700 a year. In 1914 there were in the service of the city 187 young physicians receiving $1,200 a year each, while in the higher salary grade of $1,800 a year, which is reached after three years of service, there were only 36. This means that the young men know that they can do better in private practice, even with their office expenses, than the $1,800 a year offered in public service.

In order that the number of physicians should increase as fast as the population, and enough additional physicians would be trained to take the places of those who would drop out of the ranks because of death, the country would need 4,500 new recruits per year. In 1913 there were only 3,981 graduated from the medical schools.

The number of graduates has been steadily decreasing on account of the stricter requirements for admission to the colleges, the longer courses of instruction, and the more rigid examinations by the state licensing boards.

There are now thirty-two medical colleges which re-

quire at least two years of regular college work for admission, twenty-one others require one full year of college work in science and modern languages. As other colleges will increase their requirements, the number of graduates will likely decrease, and the opportunities will be correspondingly better for those who can afford the time and command the means for meeting the new standards.

In the eastern colleges the average annual tuition fees average $175 for a year, consisting of 33 weeks. During his vacations the student ought to be able to earn enough for his support. Few scholarships are available for the medical course, loan funds are not, as a rule, controlled by medical faculties; so that a student is not likely to be in a position to get the best out of a medical course unless his available capital is between one and two thousand dollars.

It is true that every medical school has its stories of those who won out without any resources at their command. One young Russian who landed in New York at sixteen, although handicapped by his ignorance of English and defective eyesight, not only supported himself while he was earning the necessary credentials for entering the medical school at one of the city high schools, but earned his entire support and his outlay for his medical education. A young Hebrew served as a proofreader on a night shift during a great part of his medical course; an ambitious young German made the greater part of his expenses by serving as a night attendant at a sanitarium during his vacations and for a few hours a day during term; a young Italian, after completing his high school course, worked in a barber shop for two years to accumulate some savings and

afterwards during his medical term for a few hours each day, thus supporting himself and paying his way. A young colored man earned his entire support while taking his college course at Cornell, working one year before beginning his medical course at one of the New York City colleges. With the exception of a small loan for his fourth year he succeeded in making his entire expenses.

Because of the large increase in the number of salaried positions which are open to medical graduates it is easy for the young doctor to make his living immediately after his graduation. Of the 93 physicians who passed the United States Civil Service examination in 1911, 39 received appointments before the end of the year. In hospitals and in the public service appointments are not hard to secure. The number of these salaried positions has been increased by the employment of physicians to look after the welfare of the employes of corporations, the organization of medical departments by life insurance companies for the instruction of their policy holders, and the introduction of medical inspection in schools. In many of these positions the salaries are so good that young men are tempted to continue in them after they have acquired the experience which is desirable before beginning a private practice.

Of those who had been interviewed the greater number were of the opinion that a young doctor will sooner acquire a living income in a country town than in the city, that he will have a greater variety of work to do, and that, while he will work harder than educated men of his community in other walks of life, in a few years

he should be able to make a net income of from $1,500 to $2,500.

The impression prevailed among those city practitioners who were interviewed that the young man of good habits with the best training of our advanced medical schools should in the fifth year of practice make a net income of from $2,000 to $4,000, and that among the older practitioners incomes of $5,000 were common.

For those to whom work of this kind appeals who cannot afford a course of training in a regular medical school there are openings as attendants and helpers in hospitals and state institutions for the incurables and insane. Many of these prefer male attendants and provide a course of training which prepares for the higher positions in such institutions and for private nursing. Private nurses properly trained are called upon to attend and to travel with invalids and to assist in health resorts.

There are private institutions which send out alluring advertisements, offering short courses which prepare for profitable careers in chiropody, the treatment of diseases of the feet; in massage, the cure of circulatory disorders by mechanical methods; in scalp treatment; and mental healing. Such schools should not be patronized without the most careful investigation.

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PRACTICAL PROBLEMS

The Medical World estimates that in 1902 there were in the United States 100,000 physicians whose average income was $1,000; 20,000 averaging $2,000 each; 8,000 physicians making $3,000; 2,000, $5,000; only 1,500 averaging $10,000; 200 reaching the $20,000 mark; 150 specialists at $25,000; perhaps 100 who could claim incomes of $30,000. Estimate the total of medical fees and the average per capita of the population. Compare this with the expenses of your own family for medical services.

CHAPTER XXXIX

Law

Students in high school and in college devote much of their time to the study of history. The leading actors in the great events of American history have been lawyers whose influence suggests to the ambitious young man the desirability of the law as a career. His friends will tell him that the profession is overcrowded. Each town and village will point to those who are failures and to others who have given up the law for other pursuits.

Until in very recent years the candidate for law would enter the office of some attorney as a sort of apprentice. He would serve as clerk or messenger without pay for a number of years, become familiar with legal forms and usages, learn how to use law books, and in due time, after a superficial examination, be admitted to the bar to practice. He would then secure office room and await the appearance of clients. To meet his expenses he would act as agent for insurance companies, engage in real estate business, or seek work with corporations. In 1880 we find that for our entire country there was one lawyer to every 782 of the population. This ratio in more recent years has shown a steady increase, which may be due to the more careful methods of taking the census. In 1910 we had one lawyer for every 800 of population, or, say, for every 200 families. If we count the annual legal expenses

of any ten average families of our acquaintance for a year and multiply it by twenty I fear that it would not make a large average annual income for the lawyers of the country.

The diagram given below will indicate how an estimate of the opportunities in any given locality may be made by the use of the census figures.

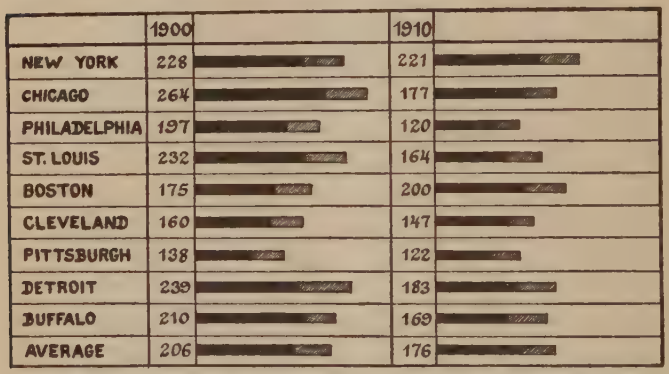

DIAGRAM SHOWING THE NUMBER OF LAWYERS PER 100,000 OF POPULATION IN EACH OF SEVERAL SELECTED CITIES.

The character of a city will have much to do with determining the number of lawyers which may be needed. In places where the number of lawyers given as over 45 years of age is less than 30% of the whole number it may be assumed that some do not find it remunerative and therefore seek other fields. If the percentage of those over 45 years of age is unusually large it may also mean that younger men have not been entering the profession in such large numbers.

The profession of law in most communities supplies a good living and is an introduction to respect and esteem in society. There are a few lawyers in every large

city whose earnings are $100,000 a year, some $50,000, more $10,000, but by far the greater number earn $4,000 or less. In 1912 the secretary of the Harvard Law School sent letters to all the graduates of the school from 1902 to 1911 inclusive, asking for their net earnings each year since graduation. He received answers from less than half of them. The figures he received are probably too high to represent the average earnings, as it is probable that those who sent replies were the more successful ones. The report is as follows:

Year.	Number of Replies.	Average Earnings.	Year.	Number of Replies.	Average Earnings.
1st	249	$664	6th	249	$3,118
2nd	162	1,110	7th	162	3,909
3rd	497	1,645	8th	112	4,426
4th	411	2,150	9th	62	5,321
5th	317	2,668	10th	40	5,825

There is no standard of fees. The American Bar Association has adopted a code of ethics defining duties and obligations of lawyers and the matter of fees is summarized as follows: "The lawyer's charges should depend upon the value of his advice and his services to a client, on the magnitude of interests involved and on the client's ability to pay. Controversies with clients in regard to charges is to be avoided as far as possible."

The work of a lawyer is so varied that most lawyers of to-day are specialists, but a lawyer doing the greater part of his work in any one of these fields may also have some practice in any other field. The lawyer who does not confine his practice to any particular field is called a general practitioner. A criminal lawyer is one

who looks after the interests of those charged with crime. Some men confine themselves to damage suits. A real estate lawyer attends to conveyancing of property and examining of titles; he may engage in buying and selling properties himself; he may be called upon to administer estates and handle trusts. A patent lawyer secures patents from the government and acts as attorney in patent cases. An admiralty lawyer deals with cases that arise out of accident or other causes at sea. Their work may be classed as office work and work in court. Much office work has nothing to do with court trials. It consists of preparing legal papers and in giving advice. There is always considerable office work involved in preparing a case for court. Many lawyers confine themselves exclusively to office work. They frequently become notaries or justices of the peace so that they may accommodate clients who wish to acknowledge deeds or other legal papers. These offices are usually held by men who are not lawyers. A justice of the peace is elected by the people and a notary public is appointed by the governor. They receive fees for this work. Then, too, conveyancing and buying and selling and managing of real estate are often done by men who are not lawyers. This is a business that many men have found lucrative. Large fortunes have been amassed in this way. The young lawyer may find this a good field for him if he discovers that he is not adapted to the practice of law. It may also appeal to some young men instead of the profession of law. A shorter period of preparation is required for it.

To-day we find openings for legally trained men that formerly did not exist. Many business houses and corporations have salaried lawyers. These have increased

greatly as the volume of business has increased and the large business concerns have multiplied.

The undecided young man who has leisure and opportunity to pursue law courses should not fail to do so. Courses can readily be selected which will increase his value in many other occupations and serve as a preparation for citizenship.

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CHAPTER XL

Journalism

This profession is unlike all others. There are no fixed standards of admission, influence counts for very little, and success depends upon the originality of the man and his capacity for work. The conditions are different in every establishment.

The successive steps in the progress of an average individual in one of our metropolitan newspapers furnishes a helpful outlook into a field in which many successful men have developed their best powers, and in which also many others have been completely undone after a few years of struggle.

A Newspaper Man's Story

My dear Mr. Weaver:

You want to know how newspaper men are made.

When I was in high school I achieved some distinction in the eyes of the teacher of English. Fortunately I lived in a home which was filled with well-selected books on English literature. Reading had ever been my chief delight. It was not much to my credit, therefore, that this teacher unfailingly commended my compositions to a class which was made up chiefly of the descendants of the immigrant classes of our city. Nor was it surprising that the boys in these classes should elect me to be the editor-in-chief of our high school

monthly. As I saw the eagerness with which they awaited the successive numbers of our periodical and the vigorous applause which they accorded the editor upon his appearance on the platform at their auditorium exercises, I was easily convinced that I was destined to become the editor of a great newspaper and I was somewhat disappointed that tempting offers were not poured in to me at the time of my graduation from the high school. I was so eager to enter newspaper work that I foolishly turned aside the advice which was given to me in regard to the desirability of a college course.

You remember, perhaps, that I appealed to you for assistance in finding a suitable position in the newspaper field. I was 16 years old, small of size, and always accustomed to an easy and comfortable time. You kindly recommended to me a list of books to read and asked me to draw up a little plan of a career and to write at the end of that plan twenty good reasons why I should take up newspaper work and to submit the same to my father for his judgment. I did so. My father agreed to it as readily as he approved my request for a new pair of shoes. I remember that when I came to you with my plan you added to it ten reasons why I should not take up newspaper work and you appointed a time at which I should be prepared to debate the question with you. I remember at that debate you permitted me to overrule your objection and at the conclusion we had quite an array of good and apparently sound reasons why I should take up the business, and that for some unexplained reason you filed away my plan instead of permitting me to take it away with me, and that you gave me a letter of introduction to the office manager of one of our daily newspapers. This letter,

which was the means of securing me a position as office boy in the Brooklyn branch of a New York morning paper, I still retain.

My mother was proud of my new position. I didn't dare to tell her how discouraging it was, nor was my father willing to have her know that my pay was just about half of what my acquaintances were earning in business offices. I was employed in taking manuscripts to the New York office, helping in the delivery room, assisting in checking up the accounts with news companies and in doing about everything but newspaper work. On my visits to the main office I heard some stories about the failures of men of all sorts who had been given trial assignments as reporters. I found out there were college graduates whose weekly pay envelopes contained less than mine, very depressing were the stories which were being told of men who had had training and experience in the newspapers of small towns before trying to make a start in a large city in which the intimate knowledge of local affairs was the first requisite for success in their work.

You may perhaps remember at the end of three months I called upon you and I expressed my determination to quit the newspaper game and a desire to get into the book publishing business. You kindly gave me a letter of introduction to the office manager of a publishing house with directions to return to you after seeing him, in order that the matter might be talked over. I shall always remember the kindly reception which that man accorded to me. He told me that book making was very much like any other manufacturing business, and that comparatively few of those employed in the publishing houses were engaged in work which

was different from the drudgery which is found in other manufacturing lines. He told me that the writers of books about whom we hear were chiefly of two classes: first, men of affairs who write the books describing their own successful achievements; and, secondly, men who were so situated as to be able to give their time so exclusively to meditation that they could reconstruct portions of the world's storehouse of knowledge in new and attractive forms, or could devise some novel schemes for the entertainment of the reading public.

Afterwards we talked over the subject and at the close of the conference you pulled out my carefully prepared good reasons for going into the newspaper business and asked me to cross out those reasons which I had found to be unsound. After looking at the remaining reasons you told me there were still enough to warrant me to stick to my job, but I said, "I can't go back to that newspaper office in which nobody takes notice of you until you make some mistake and then they kick you for it." You rose from your chair and delivered to me such a scolding as I had never expected to receive and told me that if, with all the advantages I had enjoyed, I was not able to do something in the newspaper office to attract favorable attention I had better go home and ask my mother to take care of me for I would surely never succeed in newspaper or any other work. I went back to the office the next day and determined to make a success. I started on a career of real work and succeeded in attracting attention, received some assignments as a reporter, and my progress has been steady from that day to this.

I am convinced that a young man with good health,

sound judgment, fair English education, a capacity for patient plodding, reasonably good manners, somewhat of the instinct of a detective can generally make a good living in newspaper work, earning after his third or fourth year from $20 to $30 a week, and if he enjoys the favor of the man in charge of the assignments, he may be able to earn from $40 to $50. Few newspaper offices have definite schemes of advancement. Newspaper forces are frequently reorganized and every man lives in the hope of seeing some "shake up" by which he may be fortunate enough to secure one of the few places on a newspaper staff which pay from $4,000 to $5,000 a year. Moreover, there are many tempting positions open to the experienced newspaper man. There are 25,000 newspapers in the United States. The publishers of newspapers in the smaller towns are eager to secure men with experience in the larger newspaper offices. There are journals devoted to special trades and special interests whose successful management calls for men with experience in general newspaper work. The newspaper offices have become the training schools for public officials of all classes, and an excessively large number of important public offices are filled by promotion from the field of journalism.

As the wideawake newspaper man goes about his daily task recording new developments in industry, new discoveries in science, advances in government, and new developments in our social life, he is usually the first one who discovers those subjects out of which entertaining magazine articles and new books are made.

Those who are assigned to the department of book reviews and those who report lectures and art exhibitions are in positions to learn the requirements of the

public taste and the appetite for information. For these the transition from newspaper work to the writing of books is not so difficult.

The pay for magazine articles varies very greatly, and the writers of books are usually paid a royalty of from 10% to 20% on all books sold.

The best preparation for journalism may be found in the training courses which are now offered by the leading universities. Those who cannot attend a full course will find it to their advantage during their early experience to serve successively upon the staff of different newspapers. Training in quickness of perception, rapidity of thought and condensed expression must be sought. One city editor of great experience says: "Read Dickens until you can go out and describe the men you meet as much in detail as he did. Read Shakespeare until you have absorbed some of the marvellous vocabulary he commanded. Read the Bible until you have a glimmering of how the writer condensed. Paul's address on Mar's hill takes up a little more than a stick of type and the entire story of the crucifixion is told in two sticks. No book in the world, I believe, will help the newspaper man to learn to write for the newspaper readers as much as the Bible. Read newspapers of the kind whose stories are interesting whether or not you know the places and the people mentioned in them."

The knowledge of human nature is essential to the success of the interviewer. He must know history to understand the political and social movements and he should have at his command a vast amount of knowledge of men of local and national prominence; information regarding institutions and social movements, and, withal,

be a man of wide social experiences. This means that the newspaper man must have a large equipment. The field is worthy of men of this kind. The successful newspaper man is accorded a position which is unique in its influence. He instigates reforms, compels the correction of abuses, and directs the onward movements in human progress. His work is hard but stimulating and, although his hours are long and irregular, his period of usefulness compares favorably with those who follow other professions.

In 1910, out of 3,304 editors and reporters in New York 1,030, or about 30%, were 45 years old. This not only means that the average man can stand the strain of the work, but that he finds it attractive enough to remain in it in spite of the fact that, more than in any other profession, the newspaper men see the tempting openings which are offered to men of experience in other fields.

With a hope that this will answer your inquiry, I desire to express my gratitude to you for helping me to survive my early discouragements in this very interesting field.

Respectfully,
LESLIE TURNER.

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EXERCISES

Write supposed interviews describing the entry in journalism of any one of the following, obtaining information from biographical dictionaries:

George Ade
Winston Churchill
Stephen Crane
Richard Harding Davis
Lafcadio Hearn
O. Henry
Will Irwin
Rudyard Kipling
David Graham Phillips
Mark Twain

CHAPTER XLI

Country Life Occupations

Those who find their chief interests in the biological sciences, have a fondness for watching growing things, are interested in animal life, may choose from a very wide range of very promising occupations.

The welfare of our population is more directly dependent on agriculture than on any other industry. The proper development of the land and the conservation of soil are essentials to the existence of civilized society. This being the case, it is necessary that our agricultural interests be encouraged, and that those who are engaged in the different branches of agriculture should be trained to get the highest possible return for the capital and labor employed.

That profits and education are directly related in farm work is shown by an agricultural survey of Tompkins County, N. Y. The report concludes: "Of the owners, those who went only to district school made an average labor income of $318. The average labor income of high school men was $662. Of more than high school men it was $847. In addition to this cash income, the farmer had the use of many things free of charge which are expensive to other wage earners. The labor income of the high school farmers is $304 greater than that of the district school man. This would be 5% interest on $6,000. In other words, the high school education of the farmer is equivalent in the average to

$6,000 worth of 5% bonds." The term "labor income" as here used is the amount left after deducting from the gross receipts of the farm all expenses and 5% for all the capital invested.

The young man who wishes to engage in agriculture should have opportunity to work on a farm as well as to study. Fortunately, the would-be farmer can so arrange his preparation that he can alternate between summers of gainful work in farms and winters of study in colleges of agriculture. In the agricultural colleges of most states these winter courses are free to all students.

The social advantages are greater in the rural districts now than formerly. It is possible to have comfortable and convenient homes. There is rural free delivery of mails in nearly every community, telephones are to be found in many country homes. The trolley lines are reaching out into nearly every district and electric lights and electric power are possibilities in many places.

The business of farming is not uninteresting to the person who gives it proper attention. Every farm is an experimental station, and every farmer is a director thereof. In fact, there is no more interesting occupation than farming. The farm affords an opportunity for the best minds to exercise themselves to their full capacity. He has great opportunities for helpful social service.

He is confronted by a great variety of problems: the study of the soil, the crops best adapted to his soil, the best fertilizer for certain crops, the best method of preparing the ground, the maintenance of a high standard in his stock, economy in feeding, the care of fruit

and other trees, the care of implements and buildings, the proper direction of the work on the farm and the community interests.

Few occupations may be made to serve as a foundation for so many profitable lines of work. The thoroughly experienced farmer who has learned how to judge value of farm products and has developed business capacity may, by acting as shipping agent for his neighbors, extend his usefulness and increase his profits; while he who finds, after a period of farm work, that his interests are more in mechanical lines will find opportunities to specialize in the handling and repair of farm implements and machinery. There are few occupations in which it is so easy to make a beginning. College and high school boys may readily find opportunities to try themselves out during their vacations. A high school boy who at the beginning of vacation took a tramp through an agricultural community, applying at an attractive farm house for work at the end of his first month of service writes: "My position is a very satisfactory one. My work is varied. To-day I was up at quarter past five. I watered the poultry, brought the kindlings, sprinkled the flowers before breakfast. In the forenoon I drove the horses attached to the horse-fork, drew in a load of fodder, and unloaded two loads of hay. After dinner, I picked raspberries and currants, pulled beans and worked in the vegetable garden. I usually finish up my work about six o'clock. My appetite is capacious and our table is abundantly supplied with good wholesome food." Another says: "We are perfectly satisfied with our conditions here. I think that this is one of the lucky periods of my life. It is more healthful to work in the country, for we get the

pure air and the good food; and how one can sleep in the quiet nights! We also learn all about nature and the secrets of growing things. As a summer vacation for boys who are willing to rough it a little, do some hard work and learn much, farm work is unexcelled. Sometimes we play ball, go woodchuck hunting and fishing."

There are not many promising occupations in which the beginner can save as much and in which an independent beginning can be made with such a small capital.

Young men by serving as hired hands can in a few years save enough to support themselves while they are raising crops of their own on shares or on rented land, or secure the equipment for a beginning in poultry raising or market gardening, working for neighbors during portions of their time while they are developing their own enterprises. Profitable general farming or fruit growing requires large available financial resources. Good farm land is valued at from $150 to $250 per acre and the working capital should be nearly equal to cost of land. Profitable general farming requires at least one hundred acres of land and it should be carried on much as any other manufacturing industry is conducted.

Because of the rapid increase in market value of farm animals the animal doctor is in demand in every country community and in every city. He is also employed by corporations which own much live stock. Most states require those who would practice veterinary medicine to have a good English education and from two to three years of attendance upon special courses. Licenses are given only to those who prove their fitness by passing an

examination before a specially appointed board of examiners. Veterinarians are employed by national and state governments at salaries ranging from $1,400 to $1,600, at army posts beginning at $1,700, and by ranchmen at from $1,200 to $3,000 per year.

The courses offered by the state agricultural colleges give a training which may serve as a foundation for reaching the influential work of the nurserymen and seed men who raise trees, plants, bulbs, and seeds for farmers and planters and develop new plant forms; for the floriculturist, who raises flowers and manages greenhouses; for the superintendents of the country estates of the wealthy; and for the landscape gardeners and architects who supervise the parks of our cities. Many of these callings rank in pay and influence with our better known professions.

Forestry is the best known of these professions. The purchase by the government of large tracts of land for the purpose of increasing our timber supply through the wise management of our forests created a demand for properly trained foresters. Many state institutions instituted training courses which have been so widely advertised that it is probable that the graduates of these schools may exceed the demand in the near future. About 60% of the trained foresters of the country are employed by the United States government. A civil service examination is required of candidates. The forest rangers are paid from $900 to $1,500 per year; assistant foresters, $1,100 to $2,000; examiners, $1,600 to $2,200; and supervisors as high as $2,700, while the administrative officers of the service are paid from $2,500 to $3,750 a year. A few state foresters receive from $2,000 to $4,000.

In states in which fruit growing is an important industry men with the same kind of training are employed as expert advisers to orchardists and as inspectors to watch for appearances of destructive blights.

For those who specialize in animal breeding and raising there are similar state positions and also positions as superintendents of the wild game preserves. Many states also employ men to conduct fish hatcheries and to plan for restocking the streams with fishes.

The range of salaries of these experts is about the same as the salaries paid in the forest service.

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CHAPTER XLII

Business Proprietorship

The descendants of our old American families have behind them generations of freedom-loving ancestors. If their heritage counts for anything, they will be discontented in any hired man's position. Others may need guidance and oversight to do their best; they will do their best only when as untrammelled as their wilderness-conquering ancestors. Others may need continued encouragement and the stimulus of the weekly pay envelope; they have such confidence in their own judgment, such faith in their own abilities, and such courage as will carry them on to distant goals.

Big businesses have overshadowed everything. Only the government officials seem to know that, even in manufacturing, one-third of all the establishments are rated as producing products valued at $5,000 or less per year. Big business, sometimes lawless business, has made it harder for independent small business men to get a start. Times are changing. Already the small man can secure his power about as cheaply as the large manufacturer can produce his. Freight discriminations against the small shipper as in favor of the large producer are no longer lawful. The telephone enables the small man to keep in touch with his customer without neglecting the supervision of his shop or his store, and in the handling of labor he generally has an advantage. The exposure of mismanagement in some large enter-

prises will likely incline capital to be more ready to lend itself to the small enterprises with more easily located responsibility, and the development of coöperative schemes will make it easier for the small producers to work together for their joint benefits.

He who would be his own employer has many puzzling problems to solve. He must be sure of himself and his own powers of persistence. He must learn how to find a business for which there is an opening in his own locality or find a locality in which the conditions are most favorable for the business in which he desires to engage. He wants to know what profits are to be expected and what capital is needed to carry on the business successfully.

Suppose a young man's chief interest is in science and his inclinations are toward a retail business which will enable him to become a factor in the life of a community. Let us say that pharmacy attracts his attention. It will be easy for him to study the druggist whom he knows best and compare himself with the man to determine his own fitness for the work. The directories of the drug trades which he finds in the reference libraries will enable him to determine whether the number of drug stores has been increasing as rapidly as the population. The annual records of business failures as given in the trade journals will enable him to determine whether the business is relatively as prosperous as other lines of retail business; and a friend may secure for him through Dun's or Bradstreet's directories such information as will enable him to estimate the amount of capital which is required.

If nothing unusually discouraging appears in this preliminary survey, the next step will be to secure a

position which will enable him to get inside information and to try himself. Drug stores usually have extra assistants in the summer to act as soda dispensers. These and other regular helpers receive from $6 to $10 per week. In the larger cities such helpers may be able to attend lectures at the schools of pharmacy. To be admitted to such schools the candidate is required to have the equivalent of a high school education. The special course is usually two years. The graduate earns from $15 to $25 per week. If he is fortunate in securing a position with a druggist who is about ready to retire from business he may have a chance of getting a stand with which he is familiar by the time he is ready to take up business for himself.

Service in some wholesale house provides a good preparation for other lines of retail business. One large wholesale shoe house employs large numbers of young men who begin in their shipping department. Later they may serve in the office or become outside salesmen. If their conduct and character commend them to the managers it is possible for them to secure credit to establish themselves in retail shops of their own.

If a young man is of a mechanical turn and desires to enter upon some manufacturing business, let us say, the manufacture of cutlery, he will secure from the Bureau of the Census at Washington a bulletin for this particular industry. Special bulletins are issued for all the principal industries. This bulletin will inform him of the number of establishments in the country and the number of wage earners. By the increase or decline in these numbers he may judge of the condition of the business and the prospects therein. By adding the amounts paid in wages, salaries, for raw materials and

other expenses, and subtracting the sum from the value of the manufactured products and dividing this by the amount of capital invested he may judge of the relative profits in different lines of manufacturing. Such a calculation shows that in 1899 for the entire country the cutlery business produced a return of 26% on the capital invested for interest, dividends, insurance, and depreciation. The result must have been satisfactory, for in ten years the amount of capital invested was doubled and the returns at the end of ten years showed a slightly larger return. From the same bulletin he will learn that of the 959 establishments, 397 employed five wage earners or less. This means that there is a chance for making a relatively small beginning in this industry.

From the same census bulletins he will note for each of the leading industries the total amount of capital invested, the total value of the product, and a classification of establishments according to the value of the product. Thus, for hosiery he will note that for the entire industry the amount of capital invested is 84% of the product, and that there are fully 10% of all the establishments whose average annual product is less than $5,000. It means that there are 129 knitting mills in the country doing business with less than $5,000 invested, and that this number of mills is larger than in 1899. A study of such figures for the principal industries will overcome the general impression that this is the day of big business and that the man of small means has no longer any chance.

Business enterprises are of two kinds: those which depend upon local patronage and others which do not depend upon the inhabitants of their own city for sup-

port. A man who desires to enter a business of the first kind will determine in what lines his own city is not as well supplied as the average of ten selected cities. In Pittsburgh there was one bakery for every 2,000 of population, while in Buffalo and in Cleveland there was one to about every 3,000. It might be inferred that for a new bakery the newly developed residence districts of Buffalo and Cleveland would offer better openings than Pittsburgh. For other lines of business there are many advantages in locating in some city in which the particular business has been well established. There the raw materials can be purchased to better advantage, better skilled labor can be secured and the arteries for the distribution of the finished materials can better be reached.

If such a preliminary survey shows favorable conditions the young man will seek service in an enterprising establishment of the kind, preferably a small establishment, on any terms and spend enough time in it to learn all the details of the business, taking, meanwhile, course in economics, business management, in securing training in the technical problems involved in the industry. Short periods of service in several other establishments of the same kind will be helpful.

Of course, records of failures will be discovered, the inquirer will hear stories of hard luck, he will be told of men who met defeat when a long-deferred success seemed to be within their grasp, and at every turn along promising roads ghosts will rise out of ruins to frighten him. Flight at their appearance will bring the coward more quickly to his deserts than a forward march will bring the brave to his reward.

TABLE SHOWING THE ENTIRE NUMBER AND THE RELATIVE NUMBER OF LARGE AND SMALL MANUFACTURING ESTABLISHMENTS IN THE UNITED STATES IN 1910.

	Entire Number	Percentage with Five or Fewer Employes	Percentage with 100 or More Employes
Agricultural implements	640	43	15
Artificial stone	3,439	86	*
Artists' materials	46	52	5
Artificial flowers, feathers	412	30	4
Automobiles and parts	743	31	19
Awnings, tents and sails	621	66	*
Babbitt metal and solder	109	71	*
Bags, other than paper	108	23	24
Bags, paper	74	32	12
Baking powder, yeast, etc	144	69	4
Belting	185	42	12
Bicycles, motor cycles, parts	95	54	16
Blacking and polishing material	501	83	1
Boots, shoes and material	1,918	23	26
Boxes, cigar	274	39	4
Boxes, fancy and paper	949	11	9
Brass and bronze products	1,021	46	7
Bread and bakery products	23,926	84	1
Brick and tile	4,215	41	2
Brooms	898	74	1
Brushes	384	29	4
Butter and cheese	8,479	88	*
Buttons	444	39	9
Canning and preserving	3,767	52	2
Carriages, wagons, materials	5,492	61	2
Cars and repairs	1,796	11	39
Chemicals	349	35	14
Charcoal, lampblack, bone black	105	62	0
Chocolates and cocoa	27	14	35
Clocks, watches and parts	120	28	25
Clothing	10,912	21	6
Confectionery	1,944	55	6
Cooperage	1,693	64	3
Coffee and spices	607	56	2
Copper, tin and sheet iron	4,228	60	3
Cordage and twine	164	13	58
Cordials and syrups	117	68	2
Corsets	138	41	27
Cutlery and tools	1,055	51	8
Dyestuffs and extracts	107	36	6
Engraving and die sinking	335	80	5

	Entire Number	Percentage with Five or Fewer Employes	Percentage with 100 or More Employes
Electroplating	461	68	*
Fertilizers	550	40	9
Firearms and ammunition	66	20	31
Fireworks and explosives	128	25	15
Flags and banners	211	64	3
Flour and grist mills	13,253	76	*
Food preparation	1,213	66	2
Fur goods	1,241	56	1
Furniture, refrigerators, pianos	2,627	43	5
Gloves and mittens	377	39	7
Hats and caps	865	13	9
Hosiery and knit goods	1,374	16	33
Jewelry and instruments	2,828	24	7
Labels and tags	96	39	6
Leather goods	2,375	60	3
Leather	919	26	17
Lumber and timber products	40,671	55	3
Machinery and parts	15,690	43	9
Marble and stone work	4,964	62	2
Millinery and laces	1,579	30	4
Mineral and soda waters	4,916	70	0
Oils	1,105	26	1
Paints and varnish	791	56	4
Paper goods and patterns	430	33	13
Patent medicines and drugs	3,642	58	1
Pens and pencils	76	28	9
Photo-engraving	313	34	2
Pottery	822	22	20
Printing and publishing	31,445	76	12
Rubber goods	227	33	24
Ship and boat building	1,353	66	3
Slaughtering and meat packing	1,641	32	7
Soap	420	27	7
Sporting goods	180	55	6
Statuary and art goods	194	60	1
Stereotyping and electrotyping	174	34	2
Stoves and furnaces	576	26	23
Textiles	5,277	14	27
Umbrellas and canes	256	18	4
Vinegar and cider	963	92	0
Window shades	219	61	5
All manufacturing industries	268,491	61	4

* Less than 1 per cent. All percentages expressed in the nearest integer.

CHAPTER XLIII

Occupations for the Handicapped

When more of the work of the world was done in smaller establishments or in the homes, the physically handicapped and the mental defectives under the supervision of patient relatives, could make themselves useful in many kinds of labor, but the chances for them in the organized industries of the present day are not so good.

In some of the more successful colonies for the feeble-minded these classes have been taught to become helpful as carpenters and tinsmiths, to make brooms and brushes, mops and baskets and to till the soil and do many kinds of manual labor.

From the free state-supported boarding schools for the blind many have been graduated into profitable careers as pianists, violinists, cornetists, teachers of music, piano-tuners, and others have been taught to do chair-caning, to make brooms, weave rugs, manufacture baskets, and do typewriting from dictaphone records. It has been found that it is better for the blind to work in institutions which are at once homes and factories so as to make it unnecessary for them to travel about the streets in going to and from work. Such institutions exist in most of our large cities.

Those who have been born blind or who became blind at an early age number among them many noted names:

Didymus of Alexandria heads a long list of blind theologians, preachers and philosophers; John Stanley is one of many blind musicians; John Kleinhaus was distinguished as a wood-carver; August Thiery, as historian; Nicholas Sanderson and Leonard Euler excelled in mathematics; John Kay held an important place as an inventor; John B. Herreshoff, as a boat builder, and every one knows of John Milton and William H. Prescott.

Deaf mutes have open to them almost the entire range of factory and skilled work as well as most of the lines of domestic and personal service. The graduates of one school include teachers, preachers, editors, patent office attorneys, engravers, chemists, draftsmen and architects and those who have filled public office. They have learned trades in which they became their own employers; others have prepared themselves to assist in shoe-repair shops, in tailor and in barber shops, or to become typesetters or linotype operators, watchmen, and for country life occupations.

The deaf have also their own roll of honor: John Kitto was among the foremost biblical scholars of his time in spite of his deafness and the poverty into which he was born; Albert Newsam distinguished himself as a lithographer; John Carlin, as a painter of miniatures; and Walter Geikie as painter and etcher. History is filled with the names of persons who have proved that no handicap need be a bar to the highest success.

Those who do not enjoy the full use of their lower limbs will find that they can do many different kinds of work in connection with the textile industries, engage in light machine work, in clock repairing, engraving, tailoring, typewriting, telegraph and telephone operat-

ing, and attend to ticket booths or serve behind small retail stands.

Office management and teaching some one of the academic subjects are open to those who have lost an arm or a hand, but those who have the use of neither arm or have lost both hands must select some one of those activities which are chiefly mental.

Detailed information in regard to the industries for which the blind may be trained may be secured from the annuals which are issued by the institutions for their education. A full list of these institutions will be found in the annual reports of the United States Commissioner of Education. The schools at South Boston, Mass.; Batavia, New York; Overbrook, Penna., lead in the number of enrolled students.

In the same report will be found lists of institutions for the education of the deaf and dumb. Most of the public schools for deaf mutes are schools for the elementary education of children and for rudimentary vocational training. The several state departments of education will supply information concerning the conditions under which students may be admitted to such schools.

Reference.

Holt, Winifred. A Beacon for the Blind. 1915.

CHAPTER XLIV

Special Training Schools

In selecting an occupation it is well to keep in mind the fact that there has been an increase in the number of schools for vocational training in recent years and that those who do not have access to the privileges which are offered by these schools will come in competition with others who have had the benefit of their training. From the annual catalogues and reports of such schools an excellent idea may be formed of the character of the training which is given and the expense incidental to attendance upon the course of instruction which are offered. A post-card request usually brings these publications.

To convey an idea of the extension of this kind of school work we present an index to the special training schools of New York as an example of what is offered in our large commercial cities and of the schools of Philadelphia as an example of what is done in manufacturing cities.

Students will do well to prepare a similar index to the schools of their own city. Any determined group of young men will find that the public evening schools and the schools of the Young Men's Christian Association will be ready to organize new classes in any subjects provided there is a demand for the same.

The numbers following the lists of occupations refer to the corresponding numbers in the lists of schools. Starred (*) letters refer to schools maintaining day and evening courses; italics are used to designate schools offering evening courses only; other schools have day courses only. The listing of schools carries with it no guaranty of efficiency.

OCCUPATIONS FOR WHICH TRAINING IS GIVEN IN THE SCHOOLS OF NEW YORK

Accounting: 10*, 11*, 14*, *17*, 22*, 31*, 34, 36, *50*, *51*.
Advertising: *17*, 31*, 50*.
Agriculture: 40, also Cornell University, Ithaca, N. Y.
Architecture: 11*, 13*, 33*, 41.
Art: 2*, 4*, *13*, 33*, 41, 44*.
Assaying: 11.
Auto Engineering: 50*.
Banking: 14*, 22*, 28, 31*.
Basketry: 33*, 41*, 44*.
Blacksmithing: *18*, *43*, 48*.
Bookkeeping: 11*, 13, 14*, *17*, 22*, 28, 34, *50*.
Bricklaying: 43*.
Cabinet Making: 24*, 33*, 43*, 44, 48*
Carpentry: 5*, *33*, 43, 44, 48*.
Chemistry: 9, 10*, 13*, 11*, 28, 31, 32*, 33*, 34, 36, 44*, *17*.
Civil Engineering: 11, 13*, 20, 22*, 28, 31, 32*, 33*.
Civil Service: 13*, 14*, *17*, 22*, *50*.
Clay Modeling: 2*, 4*, 41, 44.
Commerce: *10*, *13*, 14*, *17*, 20, 22*, 31*, 36, *50*, *51*.
Decoration: 13*, *19*, *27*, 33*, 37, 41, 43*, 44*, 48*.
Dentistry: 8.
Designing: 13*, 24*, 33*, 41.
Drafting: 13*, *17*, 24*, *27*, 33*, 36, 37, 43*, 44*, 48*.
Die Making: 24*, 33*.
Electrical Installation: 5*, 33*, *39*, 43*.
Electrical Engineering: 13*, 24*, 33*, 43*.
Elocution and Oratory: *13*, 21*.
Enameling and Jewelry Chasing: 33, 44*.
Engraving: 1, 7.
Etching: 4*, 7*.
Fine Arts: 2*, 4*, *19*, 33*, 41.
Foreign Language, correspondence: 6*. 11*, 28, 31*.
Foundry Work: 33, 44.
Freehand Drawing: 13*, *17*, *27*, 33*, 36, 41.
Fresco Painting: 5*, *13*, 33*, 43*.
Fruit Growing: 40.
Furniture Designing: *19*, 44, *50*.
Furniture Making: 37, 48*.
House Painting: 4*, *45*.
Illustrating: 4*, 33*, 41, 44*.
Interpreting: 6*, 11, 20, 28, 31*, 50.
Instrument Making: 24*.
Jewelry and Silversmithing: *13*, 33*.
Journalism: 11.
Landscape Painting: 4*.
Laundry Work: 33, 44.
Law: 11*, 20, 26*, 31.
Leather Work: 41.
Library Science: 33.
Linotype Operating: 29*, 37, 43*.
Lithography: 7*.
Machine Construction: 5*, 23, 24*, 33.
Machine Designing: 13*.
Manual Training: *17*, *18*, 33*, 37, 44*.
Mechanical Engineering: 10*, 11, 13*, 31, 33.
Mechanical Drawing: 5*, 10*, 11, 13*, *17*, *18*, *19*, 24*, 26, 28, 31, 33*, 36, *50*, *51*.
Medicine: 12.
Metallurgy: 11, 28.
Mining Engineering: 11.
Modelling: 4*, 13*, *27*, 33*, 41.
Motion-picture operating: *18*.
Mural Painting: 3, 4*.
Music: 11, 20, 25*, 38, *50*.
Navigation, 30.

Office Practice: 13*, 14*, *17*, 22*, 31*, 36, *50*.
Patternmaking: 24*, 33, *43*.
Painting: 41
Pharmacy: 9.
Photo-engraving: 7*.
Photography: 7*.
Plastering: 43*.
Plumbing: 5*, *33*, 43*.
Portrait Painting: 4*, 41, 44*.
Pottery: 41.
Printing: 18, 43*.
Preaching: Students should consult their pastors.
Proof Reading: 18.
Real Estate Management: 50*.
Sculpture: 4*, 11*, 13*.
Seamanship, 30.
Sheet Metal Work: 5*, *33*, 43*.
Ship Building: 49.
Showcard Writing: 7*.
Sign Painting: 5*, 43*.
Steam Engineering: 5*, 33.
Steam Fitting: *13*, 33*, 43*.
Stenography: *13*, 14*, 22*, 28, 41, *44*, *50*.
Social Service: 42, 50.
Surveying: 11*, 13*, 24*, 1, 33*, 50.
Tanning: 33.
Teaching High School: 11, 28, 31, 44.
Teaching Elementary: 31, 44, 46.
Teaching Special: 31, 33, 44.
Telegraphy: 13*, 18.
Textile Designing: 41.
Tile Setting: 43*.
Tool Making: 24*, 33*, 37.
Translating: 6*, 11*, 20, 31*, 38.
Typesetting: *18*, *39*.
Typewriting: See Stenography.
Veterinary Medicine: 31.
Wall Paper Designing: 41*.
Water Color Painting: 2*, 4*, 13*, 33*.
Wireless Telegraphy and Telephony: *27*.
Wood-carving and Wood-working: 5*, 24*, 33.
Weaving: 33*, 44*.

LIST OF SCHOOLS OFFERING VOCATIONAL COURSES IN NEW YORK

1. American School of Engraving, 30 E. 4th St., Manhattan.
2*. Academy of Design, W. 109th St. and Amsterdam Ave., Manhattan. Free.
3. Architectural League, 215 W. 57th St., Manhattan.
4*. Art Students' League, 215 W. 57th St., Manhattan.
5*. Baron de Hirsch School, 222 E. 64th St., Manhattan. Free to Hebrews.
6*. Berlitz School, 75 Court St., Bklyn., 122 Broadway, Manhattan.
Cortina Academy, 44 W. 34th St., Manhattan.
7*. Bartholdi Trade School, 92 5th Ave., Manhattan.
8. Colleges of Dentistry, 302 E. 35th St., 205 E. 23d St., Manhattan.
9. Colleges of Pharmacy, 265 Nostrand Ave., Bklyn., 115 W. 68th St., Manhattan.
10*. College of the City of New York, 138th St. and Amsterdam Ave., Manhattan.
11*. Columbia University, Morningside Heights, Manhattan.
12. Colleges of Medicine: 115 W. 68th St., Manhattan; 340 E. 26th St., Manhattan; 63 1st St., Manhattan; 437 1st Ave., Manhattan; Henry and Pacific Sts., Brooklyn; 190th St. and 1st Ave., Manhattan.
13*. Cooper Institute, 3d Ave. and 7th St., Manhattan. Free.
14*. Commercial Schools, see city directories.
15. Educational Alliance, E. Broadway and Jefferson St., Manhattan. Free.
16. Educational League, 183 Madison Ave., Manhattan. Free.
17. *Evening High Schools: 59th St. and 10th Ave., Manhattan; 116th St. and Boston Road, Bronx; Albany Ave. and Bergen St., Bklyn.; Harrison Ave. and Heyward St., Brooklyn; 50th St. and 6th Ave., Brooklyn; 116th St. and*

5th Ave., Harlem; Rivington and Forsythe Sts., Manhattan; Sutter Ave. and Vermont St., New Brighton, S. I.; L. I. City.

18. *Evening Trade Schools: 15th St. nr. 1st Ave., Manhattan; 138th St. W. 5th Ave.; 232 E. 38th St., Manhattan; 7th Ave. and 4th St., Bklyn.; Wilbur Ave. and Academy St., L. I. City; Academy Pl., Tottenville.*
19. *Evening School of Industrial Art, 202 E. 42d St., Manhattan.*
20. Fordham University, 190th St. and 3d Ave., Bronx.
21*. Hahn School of Speech Arts, 442 Classon Ave., Brooklyn; Carnegie Hall, Manhattan.
22*. Heffley School, 243 Ryerson St., Brooklyn.
23. Hoe & Co., Apprentice School, 504 Grand St., Manhattan.
24*. Hebrew Technical Institute, 36 Stuyvesant St., Manhattan. Free.
25. Institute of Musical Art, 120 Clermont Ave., Manhattan. See also the city directories for music schools.
26*. Law Schools: 305 Washington St., Bklyn.; 174 Fulton St., Manhattan.
27. *Mechanics Institute, 20 W. 44th St., Manhattan.*
28. Manhattan College, Broadway and 131st St., Manhattan.
29*. Mergenthaler Linotype, 244 West 23d St., Manhattan.
30. Nautical School, 59th St. and Park Ave., Manhattan. Free. N. Y. Nautical College, 318 W. 57th St., Manhattan.
31*. New York University, University Heights, Washington Square, Manhattan.
32*. Polytechnic Institute, Livingston St. nr. Court, Brooklyn.
33*. Pratt Institute, Ryerson St., Brooklyn.
34. Public High Schools: Albany Ave. and Bergen St., Bklyn.; 155 W. 65th St., Manhattan. Free.
35. Public High Schools: Putnam & Marcy Ave., Bklyn.; 59th St. and 10th Ave., Manhattan. Free.
36. Public High Schools: Flatbush Ave. nr. Church, Bklyn.; 166th St. and Boston Road; Benson Ave. and 17th St., Bklyn.; Evergreen St. and Ralph Ave., Bklyn.; Marcy Ave. and Keep St., Bklyn.; Richmond Hill; Flushing; New Brighton; Jamaica; Far Rockaway; Newtown; Long Island City, Co-educational. Free.
37. Public Trade Schools: 7th Ave. and 4th St., Bklyn.; 16th St. and 1st Ave., Manhattan; Wilbur Ave., L. I. City.
38. St. John's College, Willoughby and Lewis Aves., Brooklyn.
39. St. George's Trade School, 505 E. 16th St., Manhattan.
40. School of Agriculture, Farmingdale, Long Island.
41*. School of Art, 2237 Broadway, Manhattan.
42. School of Philanthropy, 105 E. 22d St., Manhattan.
43*. Trade School, First Ave. and 67th St., Manhattan.
44*. Teachers' College, 525 W. 120th St., Manhattan.
45. *Trinity Night School, 90 Trinity Place, Manhattan.*
46 Teachers' Training Schools: Prospect Pl. nr. Nostrand Ave., Bklyn.; 241 E. 119th St., Manhattan; Hillside Ave., Jamaica.
47. Union Theological Seminary, B'way & 120th St., Manhattan.
48*. Vocational School for Boys, 138th St. and 5th Ave., Manhattan.
49. Webb's Academy for Shipbuilders, Sedgewick Ave. and 188th St., New York.
50*. Y. M. C. A.: 215 W. 23d St., Manhattan; E. 125th St., Harlem; Bond St. nr. Fulton, Bklyn.; Bedford Ave. and Monroe St., Bklyn.; 318 W. 57th St., Manhattan; 531 W. 155th St., Manhattan; 9 Marcy Ave., Bklyn.
51. Y. M. H. A.: 92d St., and Lexington Ave.; Watkins Ave., Brooklyn.

OCCUPATIONS FOR WHICH TRAINING IS GIVEN IN THE SCHOOLS OF PHILADELPHIA

The numbers refer to the schools having the corresponding numbers in the list of schools. Starred numbers refer to schools offering day and evening courses.

Accounting: 6*, 10*, 11*, 44*, 49*, 53.
Advertising: 6*, 11*, 44*, 49*.
Agriculture: 24, 34, 54.
Architecture: 6*, 7*, 11*, 28*, 33, 41*, 42*, 44*, 45*, 49.
Art: 11*, 33*, 42,* 46*.
Assaying: 9, 11*, 44, 49.
Banking: 6*, 10*, 11*, 44*, 49.
Blacksmithing: 7, 11*, 28, 47*, 41, 53, 54.
Bookkeeping: 6*, 10*, 11*, 7*, 28*, 41*, 44*, 52*, 53*.
Book-binding, 33.
Bricklaying: 47*, 54.
Cabinet Making: 54.
Carpentry: 47*, 54.
Chemistry: 6*, 7*, 9, 11*, 22b, 28*, 41*, 44*, 49.
Civil Engineering: 6*, 11*, 44*, 49.
Civil Service: 6*, 44*.
Clay Modeling: 33, 46.
Chemistry: 9, 22b, 44*, 49.
Commerce: 6*, 10*, 7*, 11*, 28*, 41*, 44*, 49.
Concrete Construction: 6.
Decoration: 11*, 33*.
Dentistry: 37, 44, 49, 22b.
Designing: 11*, 7*, 28*, 41*, 42*, 44*, 53, 33*.
Drafting: 6*, 11*, 28*, 41*, 42*, 44*, 53.
Dyeing: 33.
Electrical Installation: 6, 11*, 47*, 42*, 44*, 49.
Electrical Engineering: 11*, 42*, 44*, 49.
Elocution: 25, 27, 44*.
Estimating and Plan Reading: 6*.
Fine Arts: 11*, 46*.
Food Inspection: 9.
Foundry work: 7, 28, 42, 53.
Freehand Drawing: 7*, 16, 17, 28*, 33*, 41*, 42*, 45, 53.
Fresco Painting: 33.
Fruit Growing: 24, 34.
Furniture Designing: 33.
Furniture Making: 47*, 54.
House Painting: 47*.
Illustrating: 33*, 46.
Interpreting: 3*, 12, 14*, 44*, 49.
Jewelry and Silversmithing, 51, 33.
Journalism: 49.
Knitting: 33.
Landscape Painting: 46.
Laundry Work: 6*.
Law: 44*, 49.
Lathe Work: 7*, 28*, 47*, 41*, 42*, 75.
Leatherwork: 33.
Machine Construction: 6*, 11*, 42*, 45*, 49.
Machine Designing: 6*, 11*, 42*, 49, 43.
Mechanical Engineering: 6*, 11*, 43, 49.
Mechanical Drawing: 6*, 7*, 11*, 28*, 47*, 41*, 42*, 47*, 45*, 53*.
Medicine: 20, 22, 49, 44.
Metallurgy: 22b, 44*, 49.
Modeling: 33*, 46.
Mural Painting: 33.
Music: 4, 23, 44*, 49.
Office Practice: 6*, 10*, 11*, 44*, 57.
Oratory: 25, 33, 44*.
Osteopathy: 36.
Pattern Making: 7, 28, 47*, 41, 53, 54.
Painting: 33, 46.
Pharmacy: 9, 44*, 22b.
Plastering: 47*, 54.
Plumbing: 47*, 54.
Portrait Painting: 46.
Pottery: 33.
Printing: 47*.
Preaching: Young men should consult their pastors.
Real Estate Management: 6*, 11*, 44*, 49.
Salesmanship: 51, 44*.
Sculpture: 33, 46.
Sheet Metal Work: 7*, 11*, 28, 41, 53, 54.
Ship Building: 45.
Show Card Writing: 33.

Sign Painting: 33, 47*.
Steam Engineering: 6*, 11*, 44*, 45*.
Stenography: 6*, 10*, 11*, 7*, 28*, 41*, 44*, 52*, 53*.
Social Service: 48.
Surveying: 7*, 11*, 28*, 41*, 49, 53.
Teaching: 38, 44*, 49.
Teaching, special: 3*, 11*, 12, 14*, 33, 44*, 29, 46, 25, 49.
Telegraphy: 26, 39, 44*.
Textile Designing: 33.
Translating: 3*, 12, 14*, 49.
Typesetting: 47*.
Typewriting: 6*, 10*, 11*, 7*, 28*, 41*, 44*, 52*, 53.
Veterinary Medicine: 49.
Wall Paper Designing: 33, 42*, 44*.
Watch Repairing: 35.
Water Color Painting: 33, 42*, 44*, 45*, 46.
Weaving, 33*.
Wireless Telegraphy and Telephony: 39, 44*, 55.
Wood-carving: 33*, 47*.

LIST OF SCHOOLS OFFERING VOCATIONAL COURSES IN PHILADELPHIA

1. Academy of Natural Sciences, 1900 Race St.
2. American College of Neuropathy, 17th and Summer Sts.
3. Berlitz School of Languages, 1541 Chestnut St.
4. Broad St. Conservatory of Music, 1329 S. Broad St.
5. Catholic High School, Broad and Vine Sts.
6. Central Educational Institute, Y. M. C. A., 1421 Arch St.
   - West Branch, 52d and Sansom Sts.
   - S. W. Branch, 1720 Chestnut St.
   - N. Branch, 1013 W. Lehigh Ave.
   - S. Branch, 1525 Snyder Ave.
   - P. & R. Branch, 9th and Spring Garden Sts.
   - Penna. Ry. Branch, 41st and Westminster Ave.
7. Central High School, Broad and Green Sts.
8. Chestnut Hill Academy, W. Willow Grove Ave.
9. College of Pharmacy, 145 N. 10th St.
10. Commercial Schools:
    - American Business College, 723 Chestnut St.
    - Anderson Shorthand School, 5716 Cedar St.
    - Banks Business College, 1015 Chestnut St.
    - Brown's Preparatory School, Parkway Bldg.
    - College of Commerce, 1017 Chestnut St.
    - Cotter Business College, 723 Chestnut St.
    - Germantown Business College, 5700 Germantown Ave.
    - Palmer's Business College, 16 S. South St., 1711 Chestnut St.
    - Pierce School, 917 Chestnut St.
    - Phila. Business College, 1017 Chestnut St.
    - Strayer Business College, 807 Chestnut St.
    - Taylor's Business School, 1002 Market St.
    - Union Business College, 807 Chestnut St.
11. Drexel Institute, 32d and Chestnut St.
12. Dropsie College, Broad St., below York.
13. Episcopal Academy, 1324 Locust St.
14. Foster Language System Co., 1600 Chestnut St.
15. Fourier's Designing School, 509 N. 52d St.
16. Friends' Central High School, 15th and Race Sts.
17. Friends' Select School, 140 N. 16th St.
18. Germantown Academy, School Lane and Church Sts.
19. Germantown Boys' Club, 25 W. Penn St.
20. Hahnemann Medical College, 15th and Race Sts.
21. Hebrew Educational Society, 10th and Carpenter Sts.

22(a). Jefferson Medical College, 10th and Walnut Sts.
22(b). Medico-Chirurgical College, 18th and Cherry Sts.

23. Mozart College of Music, 2116 N. 15th St.

24. National Farm School, 1001 Chestnut St.
25. National School of Oratory, Parkway Building.
26. National Telegraphy Institute, 10th and Sansom Sts.
27. Neff School of Oratory, Parkway Building.
28. North East High School, 8th St. and Lehigh Ave.
29. Northwestern Conservatory of Music, 2027 N. 17th St.
30. Penn Charter School, 8 S. 12th St.
31. Penna. Institute for the Deaf, 7406 Germantown Ave.
32. Penna. Institute for the Blind, 64th and Malvern Sts.
33. Penna. School of Industrial Art, Broad and Pine Sts.
34. Penn Industrial and Agricultural Institute, 1000 Bailey Bldg. (For colored students.)
35. Phila. College of Horology, Broad and Somerset Sts.
36. Phila. College of Osteopathy, 832 Pine St.
37. Philadelphia Dental College, 18th and Buttonwood Sts.
38. School of Pedagogy, 12th and Brandywine Sts.
39. School of Telegraphy, Parkway Building.
40. Sheldon School, Bailey Building.
41. Southern High School, Broad and Jackson Sts.
42. Spring Garden Institute, Broad and Spring Garden Sts.
43. Swarthmore College, Swarthmore, Pa.
44. Temple University, Broad and Berks Sts.
45. The Franklin Institute, 15 S. 7th St.
46. The Penna. Academy of Fine Arts, Broad, above Arch.
47. Trade Schools: 12th and Locust; Howard, above Girard.
48. Training School for Social Work, 419 S. 15th St.
49. University of Penna., 34th and Spruce Sts.
50. Wagner Institute of Science, 17th and Montgomery Ave.
51. Wanamaker Institute, 23d and Walnut Sts.
52. West Philadelphia Commercial School, 60th and Girard Ave.
53. West Philadelphia High School, 47th and Walnut.
54. Williamson Free Trade School, Delaware Co., Pa.
55. Wireless Telegraphy School, Parkway Building.

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